

Proper Environment

- Protection class: IP40 ¹
- Temperature range:
 - Operation: +5 ... +50 °C (+41 ... +122 °F)
 - Storage: 0 ... +50 °C (+32 ... +122 °F)
- Humidity: 5 - 95 % (non-condensing)
- Ambient pressure: Atmospheric pressure

¹ The protection class is limited to water (no penetrating liquids, detergents or similar aggressive media).

1) The protection class applies only with connected plugs.

Dimensional Drawing

- Ensure careful handling during installation and operation.

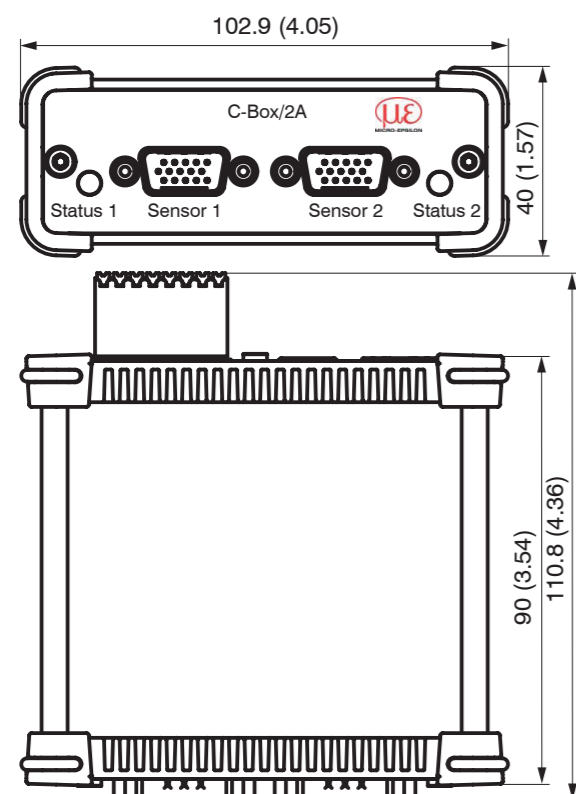


Fig. 1 Dimensional drawing C-Box/2A, dimensions in mm (inches)

Electrical Connections, LEDs


	6	RS422 TRG+	6	Laser on ¹
	7	RS422 TRG-	7	OUT S2 - Switching output 2
	8	5V CMOS output (reserve, do not occupy)	8	GND ¹
	9	Power supply +24 V via power connection	9	OUT V1 - Measurement value voltage 1
	10	Power supply +24 V via power connection	10	GNDA - Analog GND 1
Pin	Signal		11	OUT I1 - Measurement value current 1
1	RS422 Tx-		12	Shield
2	RS422 Tx+		13	OUT V2 - Measurement value voltage 2
3	RS422 Rx-		14	GNDA - Analog GND 2
4	RS422 Rx+		15	OUT I2 - Measurement value current 2
5	GND		16	Shield

Fig. 2 Pin assignment sensor connections (2), sensor 1 or sensor 2

LED color	Description
Off	No sensor connected
Green	Sensor operates within the measuring range
Red	Sensor operates outside the measuring range
Orange	Sensor in configuration mode (no measurement data output)

Fig. 3 Description LED (1) for sensor 1 or sensor 2



Pin	Signal
1	Power connection for external power supply
2	GND
3	TRG IN - Trigger in
4	MF IN - Multi-function input
5	OUT S1 - Switching output 1
6	Laser on ¹
7	OUT S2 - Switching output 2
8	GND ¹
9	OUT V1 - Measurement value voltage 1
10	GNDA - Analog GND 1
11	OUT I1 - Measurement value current 1
12	Shield
13	OUT V2 - Measurement value voltage 2
14	GNDA - Analog GND 2
15	OUT I2 - Measurement value current 2
16	Shield

Fig. 4 Pin assignment pin strip 16-pin (4), Weidmüller type (B2CF)

1) The laser is active when Pin 6 (Laser on) and Pin 8 (GND) are bridged.

- ➔ Use a bridge to connect Pin 6 (Laser on) to Pin 8 (GND) in order to turn on the laser light source of the connected sensors.

LED color	Description
Off	No power supply (Power OFF)
Green	Power ON, data output on USB interface deactivated or data output on USB interface activated and error-free data traffic
Orange	Power ON, data output on USB interface activated, data traffic is error-free or interrupted
Red	Power ON, data traffic on USB interface activated, USB cable not connected or connection interrupted

Fig. 5 Description LED for power and USB status (3)

You can find more information about the measuring system in the operation instructions.

They are available online at:

www.micro-epsilon.com/download/manuals/man--accessories-C-Box-2A--en.pdf



Intended Use

- The C-Box/2A is designed for use in industrial and laboratory applications. It is used for
- Calculation of two digital input signals, e.g. thickness measurement.
 - Filtering of measurement values.

The controller must only be operated within the limits specified in the technical data, see operating instructions, Chap 2.2. The controller 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 controller. Take additional precautions for safety and damage prevention in case of safety-related applications.

Warnings

Connect the power supply and the display/output device according to the safety regulations for electrical equipment.

- > Risk of injury, damage to or destruction of the C-Box/2A

The supply voltage must not exceed the specified limits.

Avoid shocks and impacts to the C-Box/2A.

- > Damage to or destruction of the C-Box/2A

Notes on CE Marking

For the C-Box/2A apply:

- EU Directive 2014/30/EU
- EU Directive 2011/65/EU

Products which carry the CE mark satisfy the requirements of the EU directives cited and the relevant applicable harmonized European standards (EN). The controller is designed for use in industrial and laboratory applications.

The EU Declaration of Conformity and the technical documentation are available to the responsible authorities according to EU Directives.

Functions

- Processing of 2 input signals
- Programmable via Ethernet (websites)
- Semi-automatic sensor recognition for sensors from MICRO-EPSILON with digital output
- Triggering
- Ethernet interface with TCP and UDP protocol
- USB interface
- D/A conversion of digital measurement values, output via current or voltage output

Up to two digital sensors of the same series can be connected to the C-Box/2A directly via RS422. Both sensors are synchronized via the C-Box/2A; the C-Box/2A is the master.

Quick Guide

Structure of the Components

- Sensors, C-Box/2A
 - Power supply
 - Laptop / PC and USB/Ethernet adapter or Ethernet cable
- ➔ Use a bridge to connect Pin 6 (Laser on) to Pin 8 (GND).
- ➔ Connect the components with one another.

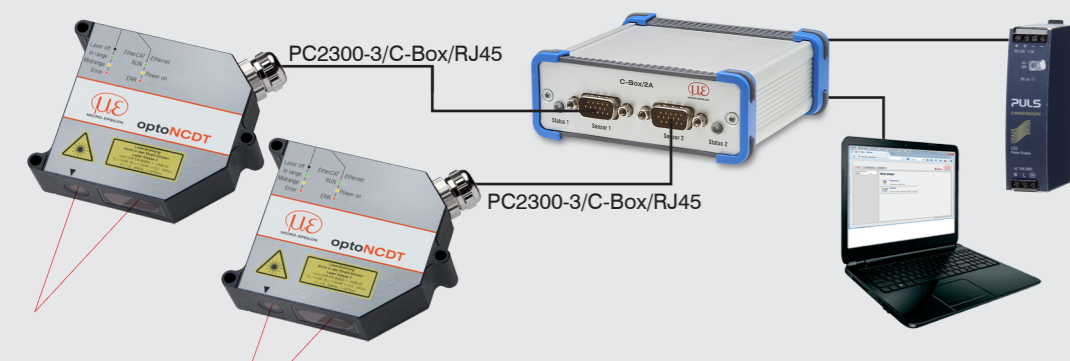



Fig. 8 Example: Connection ¹ of two ILD2300 sensors to the C-Box/2A

- 1) The C-Box/2A supports the ILD1420, ILD1750, ILD1900, ILD2300 and confocalDT IFC242x.

Initial Operation

- ➔ Connect the C-Box/2A via an RS422 connector to a PC/notebook.
- ➔ Connect the power supply.
- ➔ Start the program *sensorTOOL*. In the *Sensor group* dropdown menu, select *Inter-* *faces* and in the *Sensor type* dropdown menu, select *C-Box*.
- ➔ Click the  button.

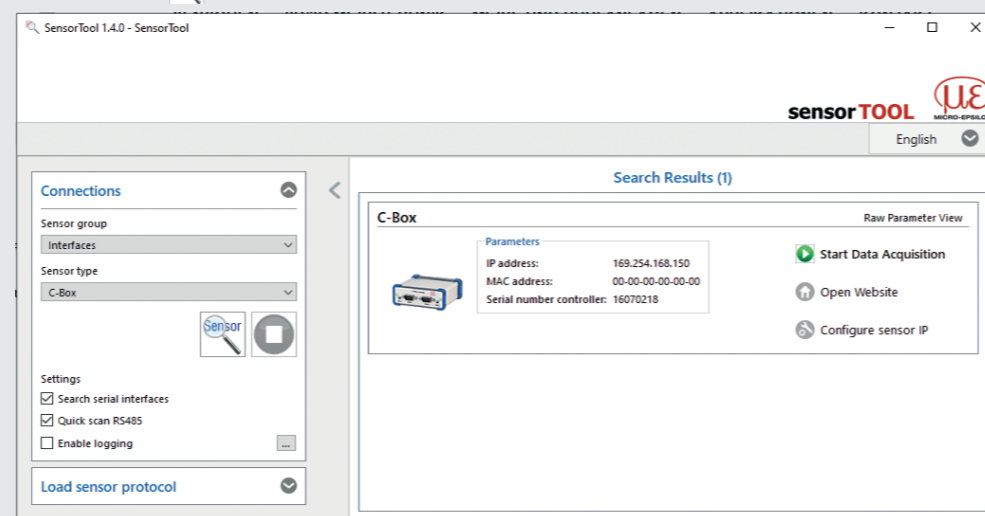


Fig. 6 *sensorTOOL* program for sensor search

The program searches the available interfaces for connected C-Box/2A controllers.

- ➔ Select the correct controller from the list.
- ➔ Click the *Open Website* button to connect the controller to your default browser.

The *sensorTOOL* program is available online at

www.micro-epsilon.com/download/software/sensorTOOL.exe.

Access via Web Interface

Interactive web pages for setting the controller are now shown in the web browser. The controller is active and supplies measurement values. The ongoing measurement can be operated by means of function buttons in the chart control area. In the top navigation bar, other functions (settings, measurement chart etc.) are available. The appearance of the websites can change dependent of the functions and the connected sensors. Each page contains parameter descriptions and tips on completing the web page.

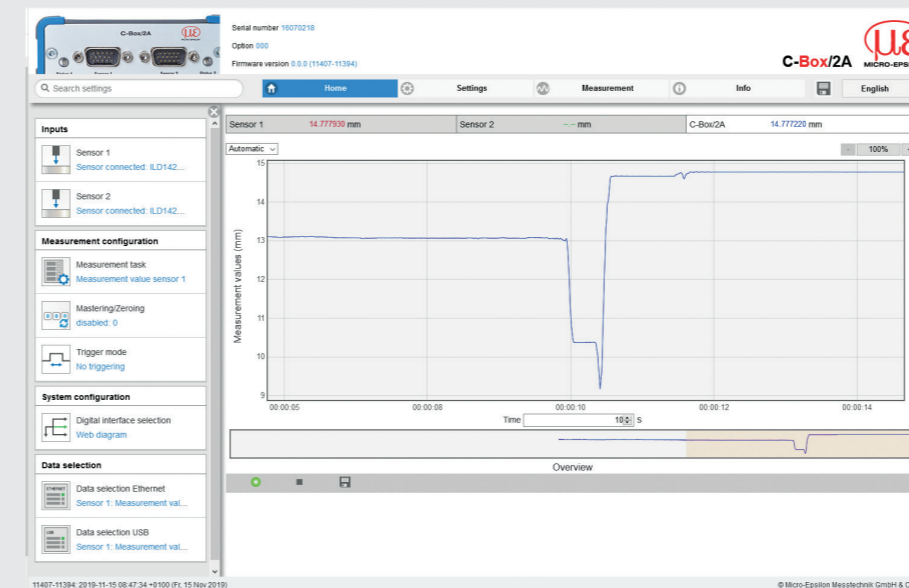


Fig. 7 First interactive web site after calling IP address

Disclaimer

All components of the device have been checked and tested for functionality in the factory. However, should any defects occur despite careful quality control, these shall be reported immediately to MICRO-EPSILON or to your distributor / retailer.

MICRO-EPSILON undertakes no liability whatsoever for damage, loss or costs caused by or related in any way to the product, in particular consequential damage, e.g., due to

- non-observance of these instructions/this manual,
- improper use or improper handling (in particular due to improper installation, commissioning, operation and maintenance) of the product,
- repairs or modifications by third parties,
- the use of force or other handling by unqualified persons.

This limitation of liability also applies to defects resulting from normal wear and tear (e.g., to wearing parts) and in the event of non-compliance with the specified maintenance intervals (if applicable).

MICRO-EPSILON is exclusively responsible for repairs. It is not permitted to make unauthorized structural and / or technical modifications or alterations to the product. In the interest of further development, MICRO-EPSILON reserves the right to modify the design.

In addition, the General Terms of Business of MICRO-EPSILON shall apply, which can be accessed under Legal details | Micro-Epsilon <https://www.micro-epsilon.com/impressum/>.

For translations into other languages, the German version shall prevail.

Decommissioning, Disposal

In order to avoid the release of environmentally harmful substances and to ensure the reuse of valuable raw materials, we draw your attention to the following regulations and obligations:

- Remove all cables from the sensor and/or controller.
- Dispose of the sensor and/or the controller, its components and accessories, as well as the packaging materials in compliance with the applicable country-specific waste treatment and disposal regulations of the region of use.
- You are obliged to comply with all relevant national laws and regulations.

For Germany / the EU, the following (disposal) instructions apply in particular:

- Waste equipment marked with a crossed garbage can must not be disposed of with normal industrial waste (e.g. residual waste can or the yellow recycling bin) and must be disposed of separately. This avoids hazards to the environment due to incorrect disposal and ensures proper recycling of the old appliances.
- A list of national laws and contacts in the EU member states can be found at https://ec.europa.eu/environment/topics/waste-and-recycling/waste-electrical-and-electronic-equipment-weee_en. Here you can inform yourself about the respective national collection and return points.
- Old devices can also be returned for disposal to MICRO-EPSILON at the address given in the imprint at <https://www.micro-epsilon.de/impressum/>.
- We would like to point out that you are responsible for deleting the measurement-specific and personal data on the old devices to be disposed of.
- Under the registration number WEEE-Reg.-Nr. DE28605721, we are registered at the foundation Elektro-Altgeräte Register, Nordostpark 72, 90411 Nuremberg, as a manufacturer of electrical and/or electronic equipment.

