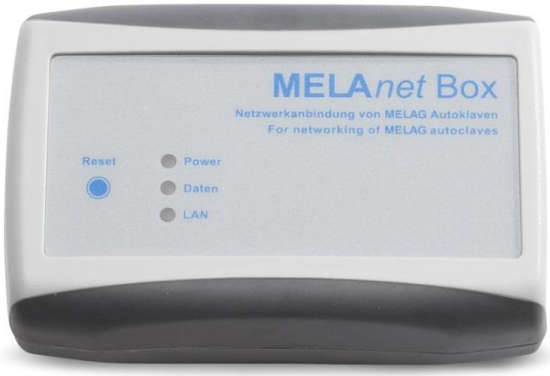
User Manual

MELA*net* Box

For networking of MELAG steam sterilizers

from software version 1.013a



EN

Dear customer,

We thank you for your confidence demonstrated by the purchase of this MELAG product.

As an owner-run and operated family concern founded in 1951, we have a long history of successful specialization in hygiene products for practice-based use. Our focus on innovation, quality and the highest standards of operational reliability has established MELAG as the world's leading manufacturer in the instrument treatment and hygiene field.

You, our customer are justified in your demand for the best products, quality and reliability. Providing **"competence in hygiene"** and **"Quality – made in Germany"**, we guarantee that these demands will be met. Our certified quality management system is subject to close monitoring: one instrument to this end is our annual multi-day audit conducted in accordance with ISO 13485. This guarantees that all MELAG products are manufactured and tested in accordance with strict quality criteria.

The MELAG management and team.

CE

General notes

Please read this user manual carefully before commissioning the device. The user manual includes important safety information. The functionality and value-retention of this device depends on the care accorded to it. Please store this user manual carefully and in close proximity to your device. It represents a component of the product.
The device type is specified on the type plate on the lower side of the device.

Should the manual no longer be legible, is damaged or has been lost, you can download a new copy from MELAG download centre at www.melag.com.

About this manual

Symbols used

Symbol	Explanation
	Draws your attention to a situation, which if not avoided, could result in damage to the device.
	Draws your attention to important information.

Formatting rules

Symbol	Explanation
Log output	Words or phrases appearing on the web browser window of the MELAnet Box configurator are marked as menu text.
`Log output`	Words or phrases appearing on the display of the steam sterilizer are marked as software citations.
Chapter 6 - Logging	Reference to another text section within this manual.
Figure 1/(5)	Reference to a detail in a figure – in the example, to part no. 5 in figure 1.

Symbols on the device

Symbol	Explanation
	The device may not be disposed as domestic waste. The vendor is responsible for appropriate disposal of the device - it must be delivered to the vendor to be disposed of.

Scope of delivery

Standard scope of delivery

- MELAnet Box
- User Manual
- Power supply
- Serial cable (RS232), 1.5 m
- Ethernet cable 1:1 (LAN), 2 m

Disposal

MELAG devices are synonymous with high quality and a long life-span. When you eventually need to decommission your MELAG device, the required disposal of the device can take place with MELAG in Berlin.
Dispose of accessories and consumption media which you no longer require in the appropriate manner. Comply with all relevant disposal specification in terms of possibly contaminated waste.
The packaging protects the device against transport damage. The packaging materials have been selected for their environmentally-friendly disposability and can be recycled. Returning the packaging to the material flow reduces the amount of waste and saves raw materials.

MELAG draws the operator’s attention to the fact that they are responsible for deleting personal data on the device to be disposed of.

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⚠Safety Instructions

When operating the device, please ensure that you observe the following safety instructions as well as those contained in the following chapters.

Installation location

- The device is conceived for use outside the patient area. The device should be located a minimum of 1.5 m radius away from the treatment area.

Cables and power supply

- Only the power supply included in the scope of delivery may be connected to the device.
- Liquids may not be permitted to reach the interior of the device. This could result in an electrical shock or short circuiting.
- Attach only those devices to the MELAnet Box designed for operation with the MELAnet Box.

Repair

- Do not open the housing of the MELAnet Box. Incorrect opening and repair can compromise electrical safety and pose a danger to the user. The guarantee and warranty are forfeited as soon as the device is opened by anyone other than a member of a MELAG-authorized technical customer service.

Application

- Do not place the MELAnet Box directly on the steam sterilizer. The steam sterilizer will become hot upon operation. Non-observance could result in restricted function and damage to the MELAnet Box.

Chapter 1 – Device description

Intended Use

The MELAnet Box enables the connection of a MELAG steam sterilizer with RS232 interface for transfer of protocols to the computer network (Ethernet) of the practice or clinic.

Compatibility to different MELAG device types

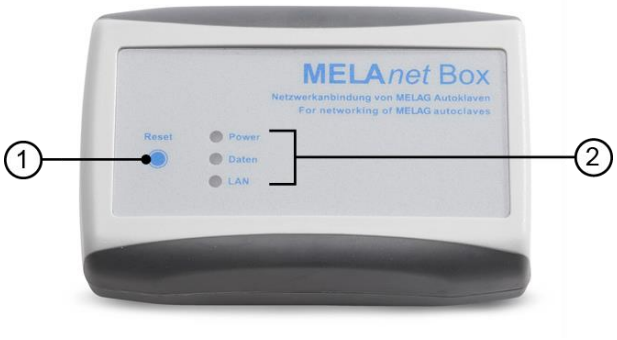
Overview of the current device types

Device class	Device type	Software version
Pro-Class	Vacuklav 23 B+ Vacuklav 24 B+ Vacuklav 24 B/L+ Vacuklav 30 B+ Vacuklav 31 B+	from v 3.34
S-Class	Euroklav 23 VS+ Euroklav 29 VS+ Euroklav 23 S+	from v 3.34
Cliniklav	Cliniklav 25	from v 3.16
MELAtronic EN+	MELAtronic EN+	from v 4.12
MELAtronic EN	MELAtronic 23 EN	from v 4.07
MELAquick	MELAquick 12+/12+p	from v 4.12

Overview of the former device types

Device class	Device type	Software version
Classics	Vacuklav 23-B Vacuklav 24-B Vacuklav 24-B/L Vacuklav 30-B Vacuklav 31-B	from v 3.16
Euroklav	Euroklav 23V-S Euroklav 29V-S Euroklav 23-S Euroklav 29-S	from v 3.16
MELAtronic EN	MELAtronic 15 EN MELAtronic 17 EN	from v 4.07

Views of the device



1) Reset key
for resetting the user-defined settings on the work settings

2) LED-lights
for status indication

3) Ethernet socket (RJ45)
for connecting the Ethernet cable to the network

4) RJ12 socket
for connecting the serial cable to the steam sterilizer

5) power supply socket (5V/ DC)
for connecting the plug-in power supply cable

Status displays

LED lights	State	Meaning
Power	ON	Device is switched on / live
	OFF	Device is switched off / not live
	flashes quickly	MELAnet Box start configuration was successful
Data (Daten)	flashing	Data is being exchanged over the Ethernet interface between the computer and the MELAnet Box.
LAN	ON	Connected with network
	OFF	Not connected with network

System requirements

Hardware

- min. 500 MB free memory for the installation of the program
- min. 2 GB RAM
- COM-connection (RS232 interface)
- if no COM-connection is available: USB/Serial Adapter

PLEASE NOTE
The USB/Serial Adapter not included in the scope of delivery. The majority of adaptors will be recognized by the operating system. Where necessary it could be necessary to install a driver by the manufacturer.

Software

- Windows 10, Windows 8.1
- a free IP address in the user network, which you can obtain from your administrator (default IP address: 192.168.40.100)
- latest version of the media library Microsoft .NET Framework, at least .NET Framwork 4.6.1
- Optional: a Web browser, e.g. Microsoft Edge, Firefox, Chrome etc.

Chapter 2 – Installation instructions

Connecting the MELAnet Box

Assigning a free IP address to the MELAnet Box

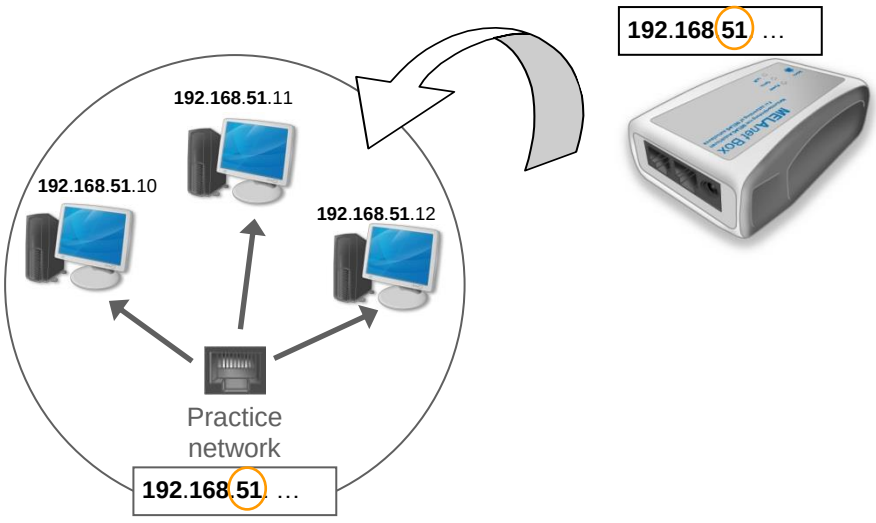
NOTICE
Errors in the handling of IP addresses can result in faults and data loss in your user network. It is thus recommended that you engage IT specialists to undertake all work in your practice network.

In order for the MELAnet Box to be operated in your practice network, the first three digit blocks of the IP address of the MELAnet Box should conform to that of the IP address of the practice network. The last digit block is assigned to the device connected in the practice network. This number is different for every device connected in the practice network.

If the first three digit blocks are not identical, it is necessary to change the IP address of the MELAnet Box so that they are recognized within the practice network.

PLEASE NOTE
As the MELAnet Box does not support DHCP and is unable to allocate IP addresses automatically, it is necessary to issue static IP addresses.

Example:

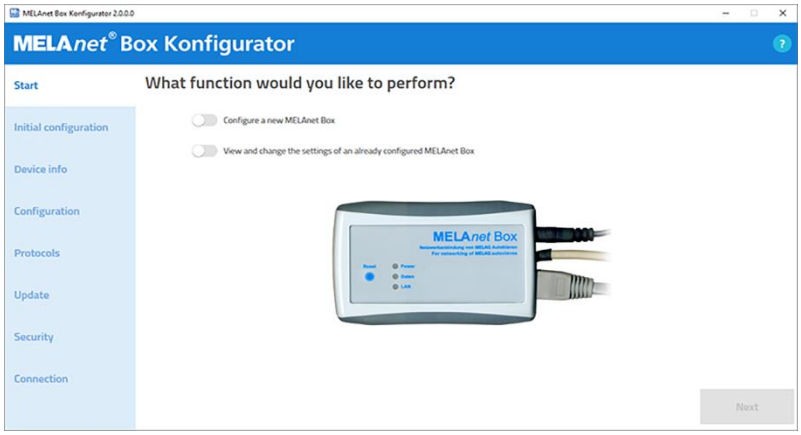


In this case, the IP address of the MELAnet Box is changed, e.g. to 192.168.51.13

To be able to configure the MELAnet Box on the computer, i.e. to adjust the IP address, the MELAnet Box configurator is used.

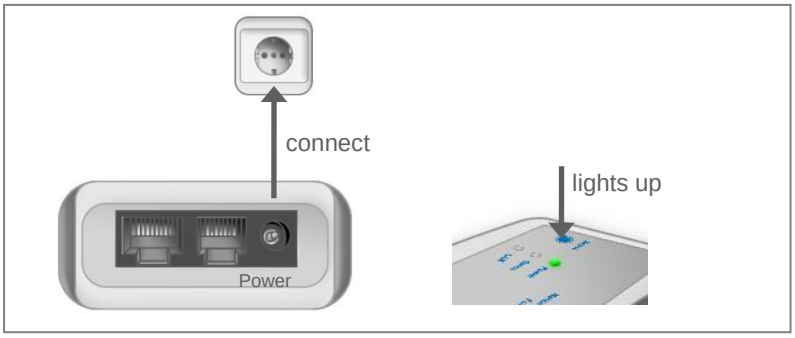
Step 1/3 Connect the MELAnet Box to your computer

Select ***Configure a new MELAnet Box*** in the start menu and click on ***Next***.



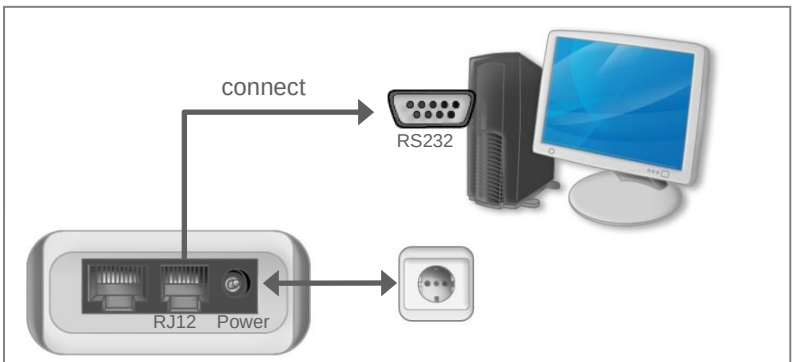
1. Obtain a free IP address from the system administrator.
2. Connect the power supply to the MELAnet Box. The Power-LED of the MELAnet Box glows green.

NOTICE
Only use the power supply included in the scope of delivery. Using a different power supply can damage the device and its functioning cannot be guaranteed.



PLEASE NOTE
Use the covered network cable to prevent the emission values from being exceeded. We recommend the type SF/UTP network cable in accordance with ISO/IEC 11801 Cat.5e.

3. Connect the serial cable to the middle connection of the MELAnet Box and plug it into the computer.



**If your computer no longer has a COM socket, use a USB/Serial adapter (not included in the scope of delivery).

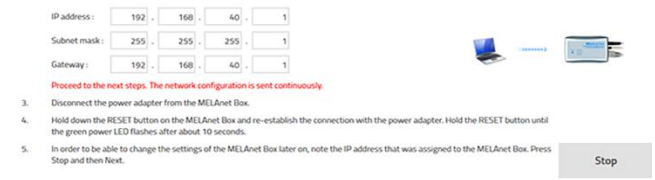
4. Click on ***Next.***

Step 2/3 configuration of the MELAnet Box

1. Select ***Search*** to establish a connection to the MELAnet Box. The following message will be displayed:

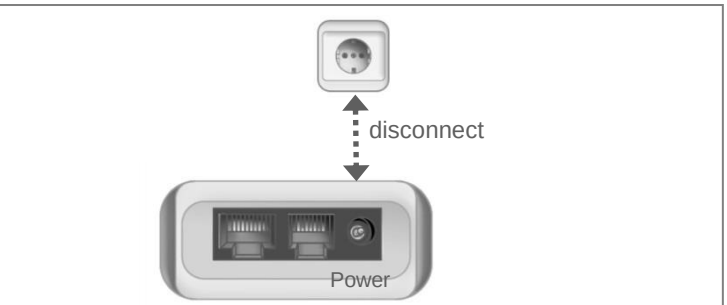
Depending on whether your COM socket is occupied, the number after the "COM" may vary.

2. Enter the Network configuration (incl. free IP address) and click on ***Send***.

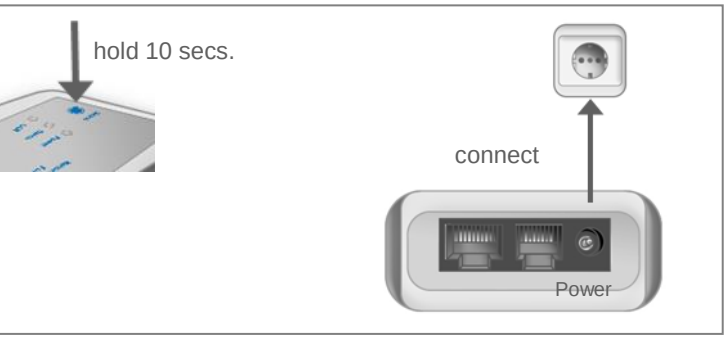


NOTE
The first three number blocks of the IP address must match those of the practice network, the last block of numbers indicates the device number and must not have been assigned.

3. Disconnect the power supply to the MELAnet Box.



4. Press and hold the reset button on the MELAnet Box and reconnect the power supply. Continue to hold down the reset button for about 10 s. until the green power LED blinks.

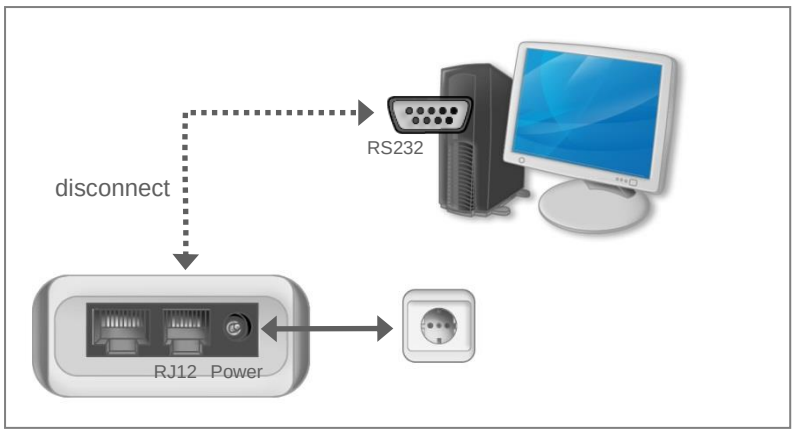


5. To be able to change the settings of the MELAnet Box later on, note down the IP address that was assigned to the MELAnet Box. Press ***Stop*** and then ***Next***.

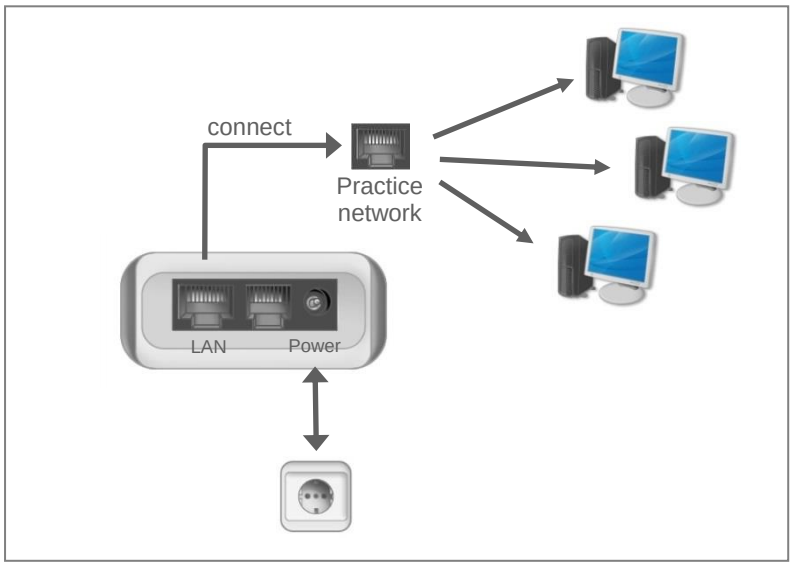
   The dialogue changes to the menu item ***Connection***.

Step 3/3 connect the MELA*net* Box with the network of the practice.

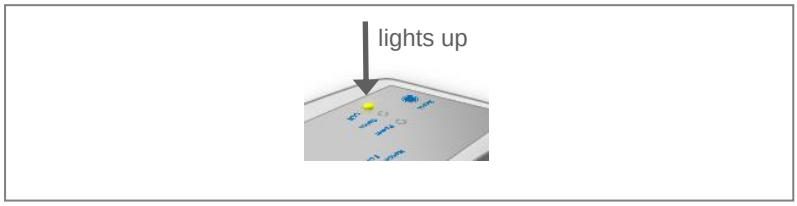
1. Disconnect the serial cable from the computer and connect it to the steam sterilizer.



2. Select MELAnet Box as the output medium on the device.
3. Connect the MELAnet Box to your practice network using the supplied network cable and the left socket of the MELAnet Box. If the connection is established correctly, the LAN LED lights up green and the data LED flashes yellow.

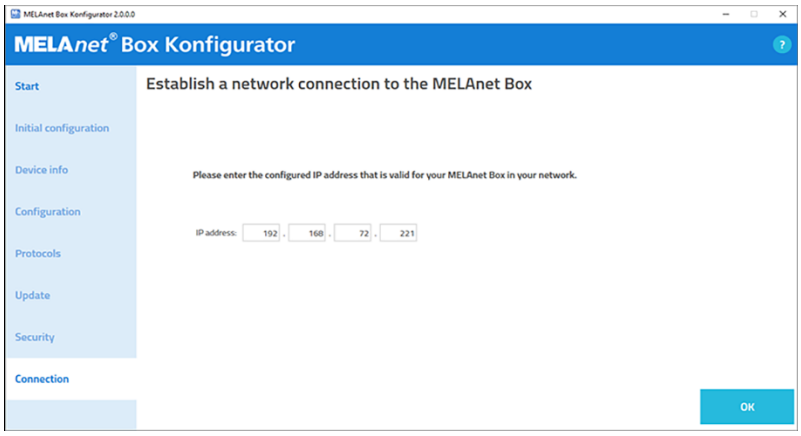


The lower LED (LAN) then lights up green and the data LED flashes yellow.



4. Test the connection to the MELAnet Box by entering the configured IP address in the address bar of your Internet browser (Microsoft Edge, Firefox, Chrome etc.).
5. Press on ***Next***.

If the installation was successful, the menu ***Connection*** become active.



Settings on the steam sterilizer

In order to be able to issue the sterilization logs via the MELAnet Box and to be able to view information regarding the program sequence or selected measured values from the steam sterilizer on the MELAnet Box, you need to set the MELAnet Box as an output medium on the steam sterilizer as follows:

For all device types from software version v 4.06:

Select the **`Function`** menu→ **`Log output`** → **`Output medium`** → **`MELAnet+Graphic`**

For all device types until software version v 3.34:

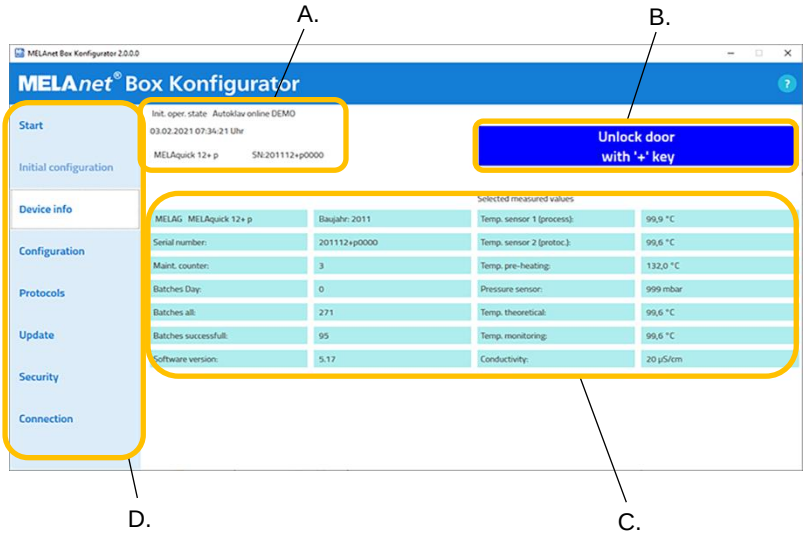
Select the **`Function`** menu → **`Print`** → **`File transmission`** → **`External PC`**

Further information about setting the output medium can be found in the user manual of your steam sterilizer.

Chapter 3 – MELAnetBox configurator

Device info menu

The ***Device info*** window shows information about the steam sterilizer and selected measurement values.



A. Shows the selected program, device type, device online or offline, date & time, serial number

B. Device display

C. Selected device measurement values

D. Navigation menu

PLEASE NOTE

If the device is not connected or switched on or the wrong setting is selected in the device, the status display (A) shows ***Autoklav offline***. The display (B) remains empty. No measurement values (C) will be shown either.

Configuration menu

The ***Configuration*** window presents an overview of all MELAnet Box settings. Here you can also change the logging settings.

After the initial installation the program switches automatically to the ***Configuration*** window.

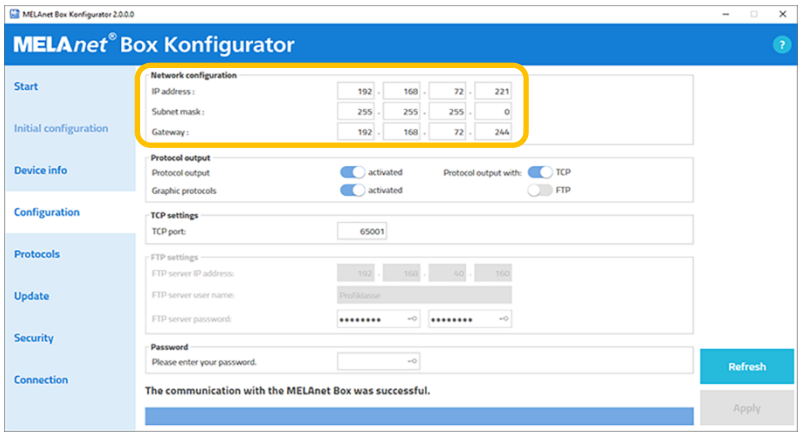
Works settings of the MELAnet Box

The IP address area shows the current network configurations of the MELAnet Box.

You can also assign a new IP address to the MELAnet Box here as follows:

1. Enter the new IP address and, if necessary, also the subnet mask and the gateway.

2. Enter your password and click on ***Apply***, to apply the changes.



Logging settings

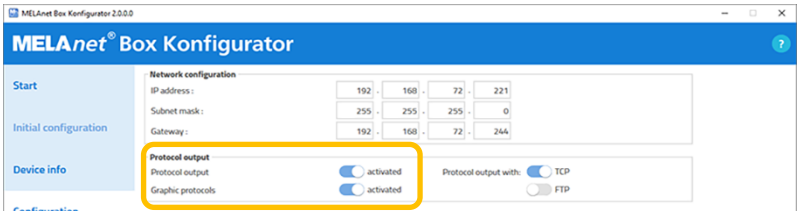
PLEASE NOTE
As all log output settings can be made via the MELAnet Box configurator, the corresponding options for log output at the steam sterilizer will be disabled in the Setup menu Function.

Immediate log output after program end

For the sterilization logs to be saved automatically on the computer after the end of a program, you must select to log output.

If in addition to the text logs you want to record graphic logs, select ***Graphic logs*** also.

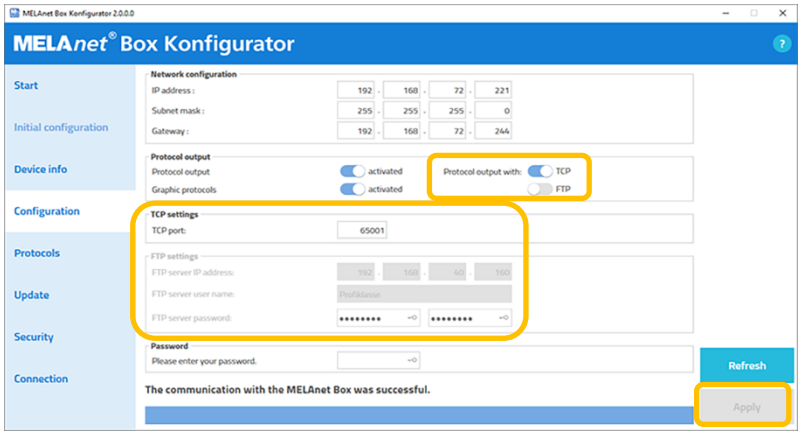
Note that in order to view graphic logs the program MELAtrace / MELAview must be installed.



Log storage via TCP

Text and graphic logs can be stored either via TCP or an FTP server.

1. Select ***Storage of logs via*** and tick the option ***TCP***. Take care that the right TCP port is selected.



2. Enter your password and click on ***Apply***, to apply the changes. (The password is "MELAG" by default.)

Log storage via FTP

If you want to store the text and graphic logs via an FTP server, an FTP server must be installed on the computer in a folder of your choice or installed later. Arrange for your administrator to perform the required FTP configuration. The use of FTP services is also possible.

1. Select the desired option in the field ***Storage of logs via*** and tick the option ***FTP***.
2. Fill out the fields under ***FTP settings***.

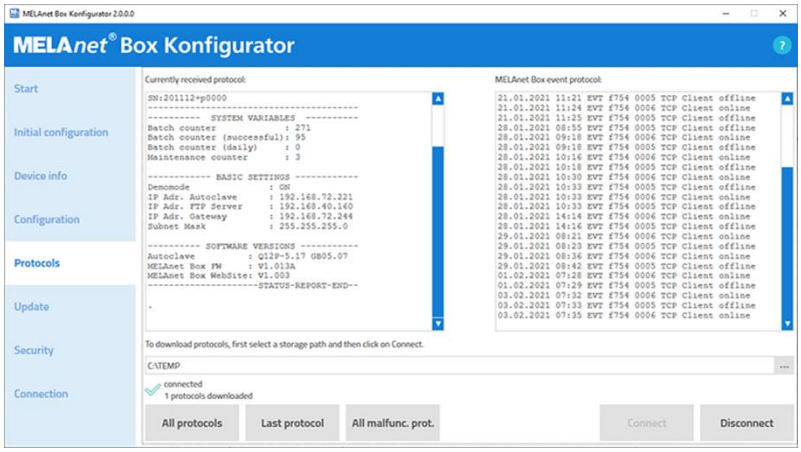
3. Enter your password and click on ***Apply***, to apply the changes. (The password is "MELAG" by default.)

Protocols menu

In the ***Protocols*** window, selected sterilization protocols (logs) that are saved in the steam sterilizer can later be output on the computer.

PLEASE NOTE

In order to be able to record a graphic log in parallel to a running sterilization program, a connection with the steam sterilizer must have been established prior to the start of a sterilization program. Otherwise it will only be possible to read the text log later.



Log output via TCP

The following requirements must be fulfilled for log output via TCP:

- In the ***Configuration*** window there must be a tick next to ***log output***.
- In the ***Configuration*** window the ***TCP*** option must be selected with the appropriate settings.
- The steam sterilizer must be in the initial state.

If you want to output logs via a TCP connection, proceed as follows:

1. Select a storage folder in your computer's file directory.
2. Click on ***Connect***, to establish a connection with the steam sterilizer.

Afterwards you may carry out the following actions:

- Start a sterilization program on the steam sterilizer and record text and graphic logs in parallel.
- Read the text log last saved in the steam sterilizer.
- Read all text logs saved in the steam sterilizer.
- Read all fault logs in the steam sterilizer.

PLEASE NOTE

To be able to switch to another menu in the configurator, the connection must be disconnected again.

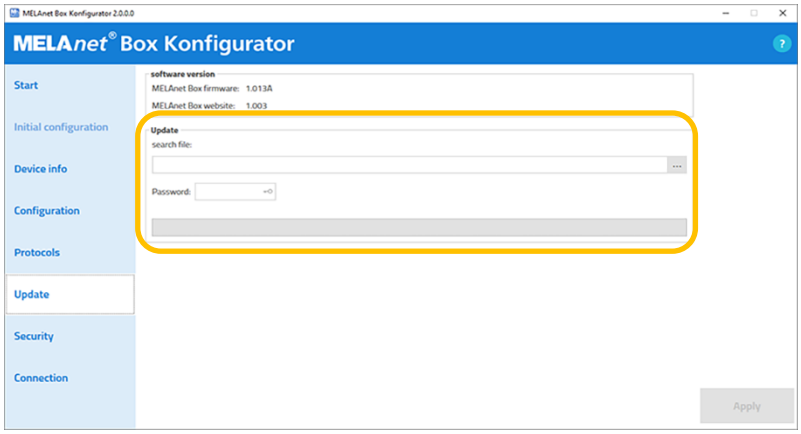
The connection is closed automatically when the MELAnet Box configurator is shut down.
But you can also close it down manually by clicking on ***Disconnect*** .

Update menu

In the "Update" window you can very easily update the software on the MELAnet Box and the web server that is available to use optionally. The update files can be obtained from your service technician.

To update the software on the MELAnet Box, proceed as follows:

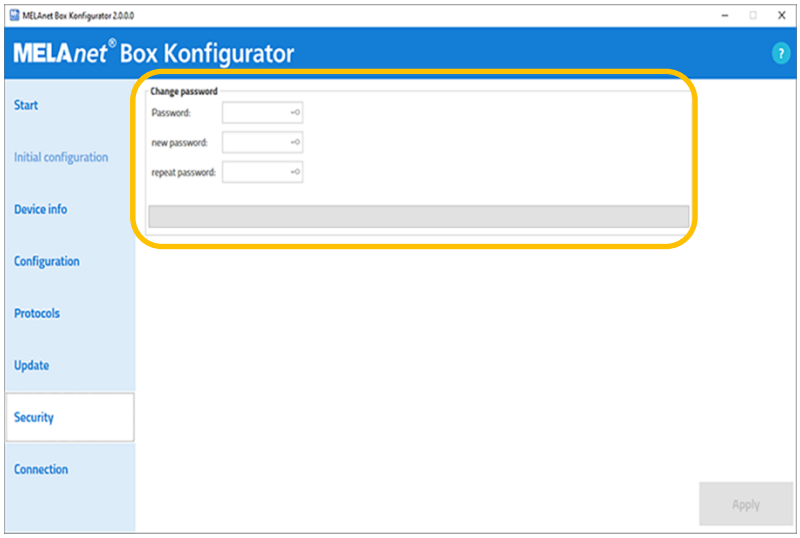
1. To open the update file from a directory on your computer, click on ... .
2. Select the appropriate update file (*.MNU) from a directory.
3. Enter your password and click on ***Apply***, to start the update.



Password for the MELAnet Box configurator

You can also change the password, to prevent unauthorized changes to the configuration settings:

1. Enter the previous password in the field ***Password***.
2. Enter the new password below and repeat it.
3. To save the new password, click on ***Apply***.



Reset user-defined settings

Here you can learn how the user-defined settings of the MELAnet Box can be re-set to the work settings.

NOTICE
The IP address of the MELAnet Box and the user-defined password will also be reset to the work setting standard values. Thus you should only press the reset key if you wish to undertake a reconfiguration as in the case of an initial start-up.

1. Remove the serial cable (RS232) to the steam sterilizer (middle socket).
2. Remove the power supply cable.
3. Hold the reset key and re-insert the power supply. Keep the reset key depressed for a further 10 seconds, until the Power LED flashes.

   The MELAnet Box has now been reset to your work settings (see page 22, **Factory settings of the MELAnet Box**)

Chapter 4 – Troubleshooting

Problem	Possible cause	What you can do
The start configuration cannot find a COM interface	Cable is connected improperly. COM interface has been assigned twice.	Check the correct connection of the cables. Select a different COM interface.
Timeout error following the MELAnet Box firmware update	Network connection too weak/too slow	Repeat process Inform MELAG customer services if necessary
"Autoclav offline" Not possible to establish connection with the steam sterilizer via the MELAnet Box configurator	Device is not switched on.	Switch on the device at the power switch. Deselect the MELAnet Box as output medium on the steam sterilizer.
The following error message will be shown: "Error while loading/sending data."	Power supply to the MELAnet Box cut off IP address is not correct, the MELAnet Box is operated in another practice network as the user network.	Check whether the power supply cable is properly connected and the power supply is plugged into the socket. Check whether the IP address of the MELAnet Box was entered correctly in the configurator and the IP address of the computer matches the settings in the MELAnet Box.
Immediate output is set to YES, but no text logs were issued after the end of the program	When a MELAnet Box is connected, this setting on the steam sterilizer is not considered.	Set the tick on the “Configuration” website next to "Log output" to activate the immediate output of the text logs.
Output last cycle cannot be selected	This option is only available via the MELAnet Box configurator when the MELAnet Box has been selected.	Click on the "Last log" button in the "logs" window and, if applicable, check the TCP or FTP settings in the "Configuration" section.
Output stored cycles cannot be selected on the steam sterilizer	This option is only available via the MELAnet Box configurator when the MELAnet Box has been selected.	Click on the "All logs" button in the "logs" window and, if applicable, check the TCP or FTP settings in the "Configuration" section.
Delete all cycles cannot be selected on the steam sterilizer	This option is not available when the MELAnet Box has been selected.	Deselect the MELAnet Box as output medium on the steam sterilizer.
Test output cannot be selected on the steam sterilizer	This option is not available when the MELAnet Box has been selected.	Click on the "Last log" button in the "logs" window and, if applicable, check the TCP or FTP settings in the "Configuration" section.
All logs have the same date as creation date	Logs were read out via the button All logs. The output date is used for the log files.	Set the tick on the “Configuration” website next to "Log output" to activate the immediate output of the text logs. The program start point is used as the creation date for the log files.
The total charge number is not counted on the protocols.	The text logs saved in the steam sterilizer were read out altogether by pressing the button All logs.	In order to avoid this, activate the immediate output of the text logs by setting the tick next to log output.

Problem	Possible cause	What you can do
Logs are overwritten, so the original date/time (of program start) are lost	Logs were read out again.	Avoid the double output of the text logs.
MELAnet Box configurator cannot establish connection with the MELAnet Box	Instead of a 1:1 connection cable, you are using a cross-over cable. If the practice network is administered by an old switch, communication with a cross-over cable will not work. With newer “smart switches” it is unimportant which Ethernet cable you use. These switches recognise automatically which Ethernet cables are being used and configure themselves independently.	Check the Ethernet cable

Log output via TCP not possible

Possibly the settings on the MELAnet Box configurator are not correct:

- Check whether the option ***TCP*** has been selected in the ***Configuration*** window, ***storage of logs via***
- Check whether ***storage of logs via*** is selected on the ***Configuration*** window.
- Have you entered the password and pressed on the ***Apply*** button? Only after having done so will the alterations be accepted.
- Check the connections from the MELAnet Box to the steam sterilizer. Has the serial cable been inserted correctly? Are the display texts of the steam sterilizer visible on the ***Device info*** window in the MELAnet Box configurator?

Log output via TCP not possible

Possibly the settings on the computer are not correct:

- Check whether an FTP server is running on your computer.
- Check whether the MELAnet Box is registered as user in the FTP server.
- If yes, compare the user name and the FTP password of the MELAnet Box against the user settings in the FTP server. These need to match.

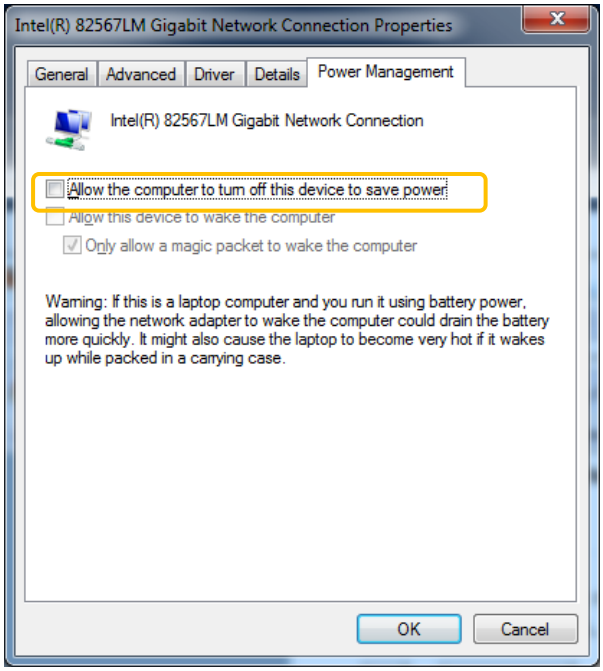
Possibly the settings on the MELAnet Box configurator are not correct:

- Check whether the option ***FTP*** has been selected in the ***Configuration*** window, ***storage of logs via***.
- Check whether ***storage of logs via*** is selected on the ***Configuration*** window.
- Check whether the IP address of the server has been entered correctly on the ***Configuration*** window.
- After entering the changes, have you entered the password and clicked on the button ***Apply***? Only after having done so will the alterations be accepted.
- Check the connections from the MELAnet Box to the steam sterilizer. Has the serial cable been inserted correctly? Are the display texts of the steam sterilizer visible on the ***Device info*** window?

Hints when using a notebook

With operation without a power adaptor and network card the laptop switches into energy saving mode.

1. Change the settings under ***Control panel → System → Hardware → Device manager → Network adapter*** by deactivating the option ***Allow computer to turn off this device to save power*** in the Properties window in the register energy management.



2. If this does not lead to success, operate the notebook with the power supply cable.
3. Check if the network adapter is activated in the ***System*** settings on the notebook.

Chapter 5 – Technical Data

Model name	MELAnet Box
Device dimensions (W x D x H)	2,8 x 6,32 x 9,45 cm
Ambient temperature - Operation - Storage	 0 – 40 °C 0 – 70 °C
Relative humidity - Operation - Storage	 8 % – 90 % 5 % – 95 %
Electrical connection MELAnet Box	DC 5 V ±10 %, 1 A
Electrical connection Power supply	100 – 250 V, 47 – 63 Hz, 1,6 A
Electrical power	max. 6 W
Length of the power cable	ca. 1,4 m

Factory settings of the MELAnet Box

Parameter	Standard value
Language	German
IP address	192.168.40,100
Gateway	192.168.40.1
Subnet mask	255.255.255.0
Storage of logs via	FTP
Log output	Inactive
Graphic logs	Inactive
TCP port	Available in 65001
FTP server IP address	192.168.40,160
FTP server user name	Profiklasse [here you can enter the name of your steam sterilizer name]
FTP password	
password	MELAG12345 MELAG

Appendix – Accessories

Article	Art. no
Power supply unit for MELAnet Box	ME30403
Power supply unit for MELAnet Box (UK/AUS/US/CHN)	ME30402
Serial cable for MELAnet Box (RS232 to Western), 1.5 m	ME15819
Network cable for printer / MELAnet Box, 2 m	ME15812

Glossary

COM
(engl. Component Object Model) serial interface (RS232)

FTP
(File Transfer Protocol) is a data transmission procedure serving to transport data from the internet. This data can include programs, files or even information. Special programs (FTP clients, here: on the MELAnet Box) serve for uploading any data on a FTP server.

FTP Server
Program which communicates with the connected client (here: MELAnet Box) and files data in a defined directory. The FTP server must be known to the client.

Gateway
A Gateway enables networks which are based on entirely different protocols to communicate with each other.

Initialization
Creating a specific starting situation of the software upon starting

IP address
The IP address serves the clear addressing of computers and other devices, here for example the MELAnet Box in a network.

MELAnetBox configurator
a software developed by MELAG which enables the configuration of the MELAnet Box and the output of the sterilization logs.

MELAtrace/MELAview
a software developed by MELAG for displaying and sorting sterilization logs and with the opportunity to display graphic logs. Text and graphic logs can be printed from the program or exported in various file formats.

LAN
Local area network in which multiple computers and other devices are connected over a communications connection.
This enables the exchange of data is possible.

LED
Abbreviation for Light Emitting Diode: Semiconductor diode which lights up when powered by current. LEDs are predominantly employed for status displays in devices, for example to display hard disk access.

Serial interface (RS232)
interface which transfers the data on a bit by bit basis, also referred to as a COM port.

Subnet mask
is a multi-part binary digit (bit mask), which in a network serves to divide an IP address into a network address and a device address. The device addresses are also referred to as host addresses. It is always necessary.

TCP
Transmission control protocol: refers to a standard protocol for connecting computers and networks.

TCP port
TCP applications address the communications partner via the IP address or a port number, which specifies the service on the target computer.

Web browser
are special computer programs to allow the user to view websites in the internet.

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Original instructions

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We reserve the right to technical alterations

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