Instructions Manual

Communication Interfaces MI485 / MI486 / MI488

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1 DESCRIPTION

1.1 MI485

The MI485 communication interface converts an RS485 signal to an RS232 signal and viceversa. The signals are electrically isolated. The communication interface is designed for connecting instruments with RS485 communication to RS232 communication (a PC, PLC, etc.). The MI485 interface with corresponding equipment enables setting and reading the instruments with communication rate up to 115.2 kbps.

1.2 MI486 AND MI488

MI486 and MI488 communication interfaces are designed for connecting the instruments with RS232 or RS485 communication to ethernet network. They enable connection of the instruments with a PC via ethernet network. The signals are electrically isolated. The interfaces are designed only for reading data from intruments (with corresponding software). They enable communication rate up to 115.2 kbps.

2 CONNECTION

2.1 MI485

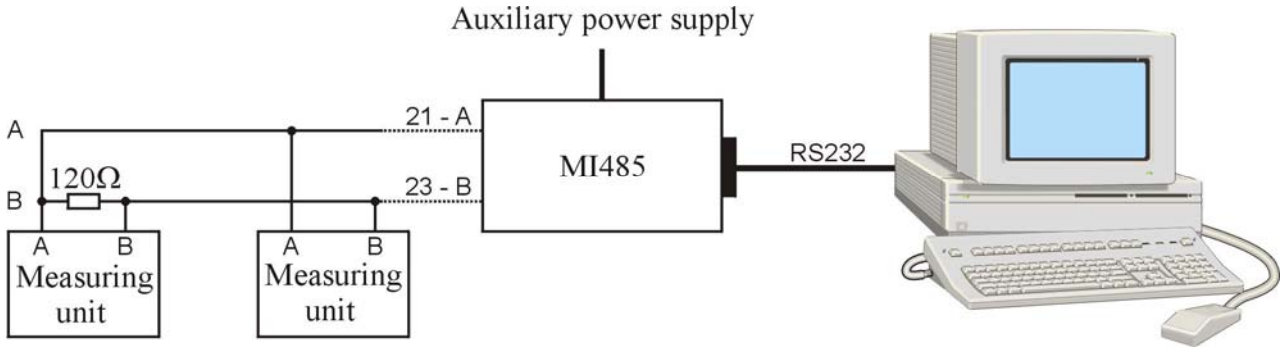
Three groups of terminals should be connected to the MI485 communication interface:

- Auxiliary power supply: It is connected to terminals 13 and 14. Auxiliary voltage value is written on the interface front label.
- RS232 communication: Connect it according to the table below. Maximal length is 3 meters.

MI485	Computer – DB9
Tx (26)	Rx (2)
Rx (24)	Tx (3)
GND (25)	GND (5)

- RS485 communication: It enables connection of up to 32 devices. The line should be terminated with a 120 Ω resistor. Connection is made according to the table below.

MI485	RS485 instruments
A (21)	DATA +
B (23)	DATA -



After connection to power supply voltage, the Power LED indicates the presence of supply, while diodes Rx and Tx indicate data transfer.

2.2 MI486 AND MI488

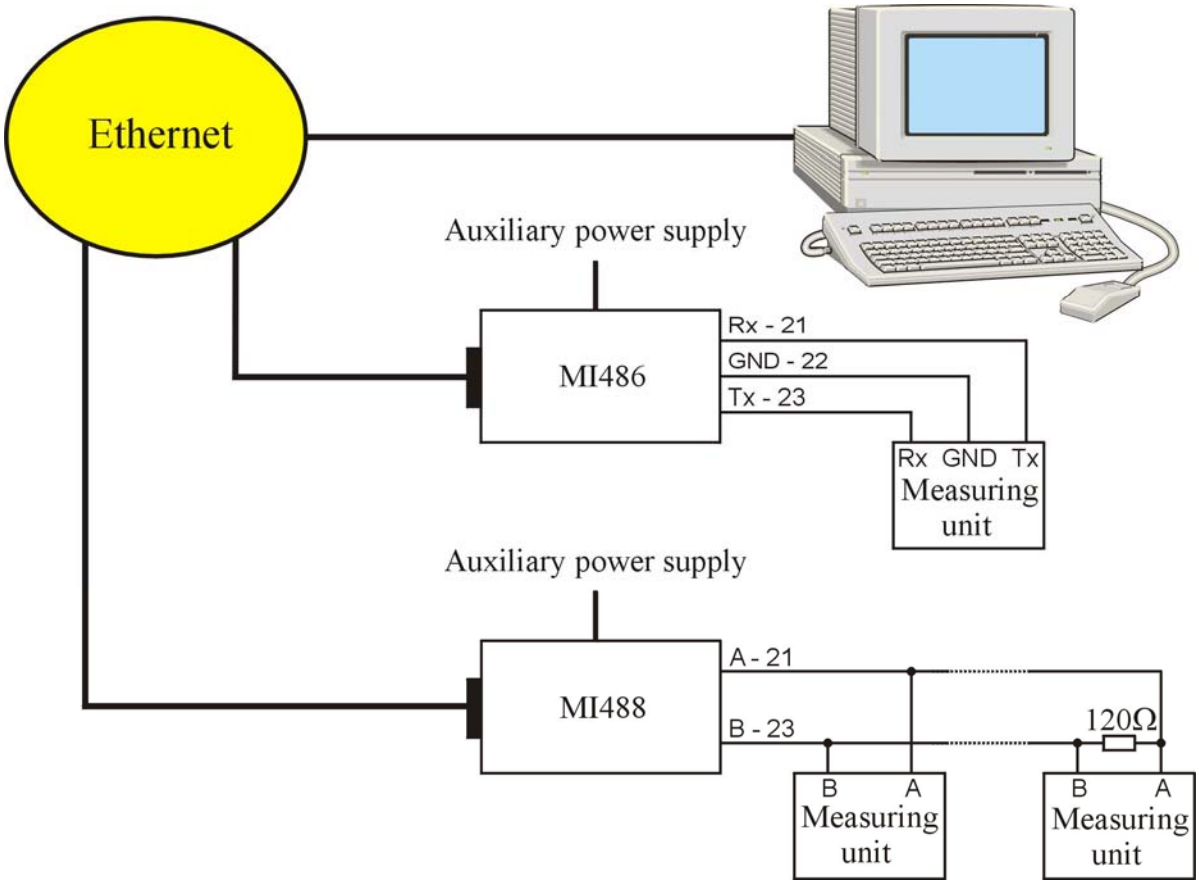
Three groups of terminals should be connected to the communication interface MI486 or MI488:

- Auxiliary power suppy: It is connected to terminals 13 and 14. Auxiliary voltage value is written on the interface front label.
- Ethernet connection: Connect the ethernet cable to 10/100 RJ45 terminal on the communication interface and connect it with ethernet network.
- RS232 communication (for MI486): Connect it according to the table below. Maximal length is 3 meters (**CROSS-OVER cable**).

MI486	RS232 instruments
Tx (23)	Rx
Rx (21)	Tx
GND (22)	GND

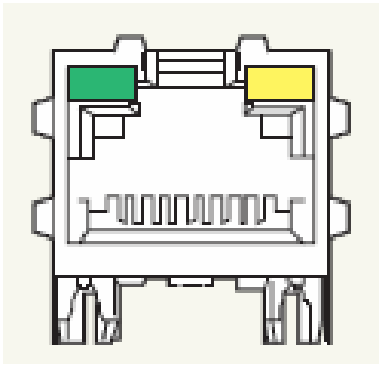
- RS485 communication (for MI488): It enables connection of up to 32 devices. The line should be terminated with 120 Ω resistor. Connection is made according to the table below.

MI488	RS485 instruments
A (21)	DATA + (A)
B (23)	DATA – (B)



After connection to power supply voltage, the Power LED indicates the presence of power supply, while the diodes on the ethernet terminal indicate the presence of the ethernet network. If network is active, one LED is lit or is blinking (the left LED indicates 10 Mb/connection /activity, and the right LED indicates 100 Mb/s connection/activity).

LEFT LED RIGHT LED



3 SETTING

3.1 MI485

The MI485 communication interface does not need any setting for its operation; however, measuring instruments connected to RS485 communication should be set. Measuring instruments connected to RS485 net should have different addresses set (when purchased their address is 33). They should also have the same communication rate (at purcase it is 9600 bits/s). The MiNet program is recommended for parameter setting..

3.2 MI486 AND MI488

Parameters for ethernet connection should be set for the MI486 and MI488 communication interfaces before the first application. Parameters are set by means of the Deviceinstaller program. Its installation and description of settings are described in item 3.2.2. The RS485 net connected to the MI488 interface should also be set. We recommend to set the net by means of the MI485 interface and the MiNet program (see item 3.1). The programs for setting the interfaces are avaliable on the CD marked MI48x.

3.2.1 SETTING ETHERNET CONNECTION

The communication interface should have a unique IP address in the ethernet net. Two ways of assigning the IP are described below.

- ***Fixed IP address:*** In most installations the fixed IP address is required. The IP addresses are usually defined by the system administrator. The IP address should be within a valid access, it should be unique for your net and in the same subnet as your PC. Before setting the interface the following data are required:
  IP address: ___.___.___.___
  Subnet mask: ___.___.___.___
  Gateway: ___.___.___.___

- ***DHCP:*** Automatic method of assigning IP addresses, i.e. DHCP, is used by many nets. If you are not sure whether DHPC is used by your net, check it at your system administrator. At the first connection, the interface searches for a DHPC server. The net can be checked for your device IP address, assigned by the DHCP server, with the DeviceInstaller program. It can then be added to the list of devices on the net.

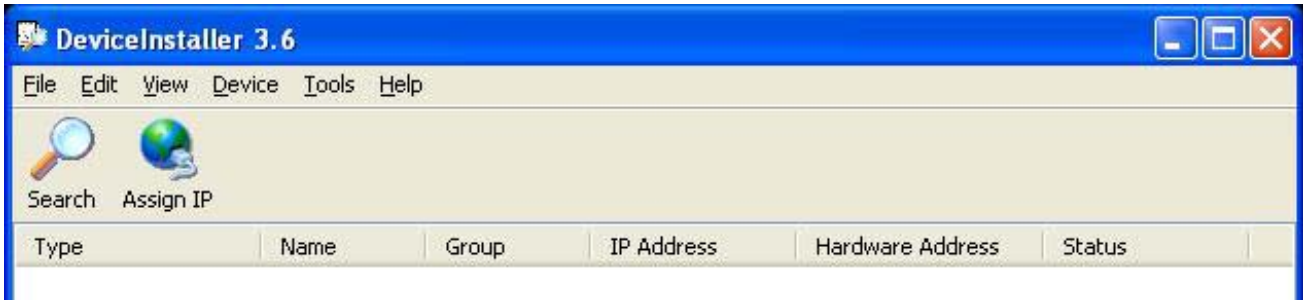
3.2.2 »DEVICEINSTALLER« PROGRAM INSTALLATION AND INTERFACE SETTING

Insert CD ***MI48x*** into your CD–ROM device.
Click a **Start** button and select **Start** in a toolbar**.**
Find a CD and choose **Setup.exe** in the **Device_Installer** directory (e.g.. **E:\Device_Installer\Setup.exe**).
Follow recommended settings by the installation wizard.
After program installation, restart the PC.

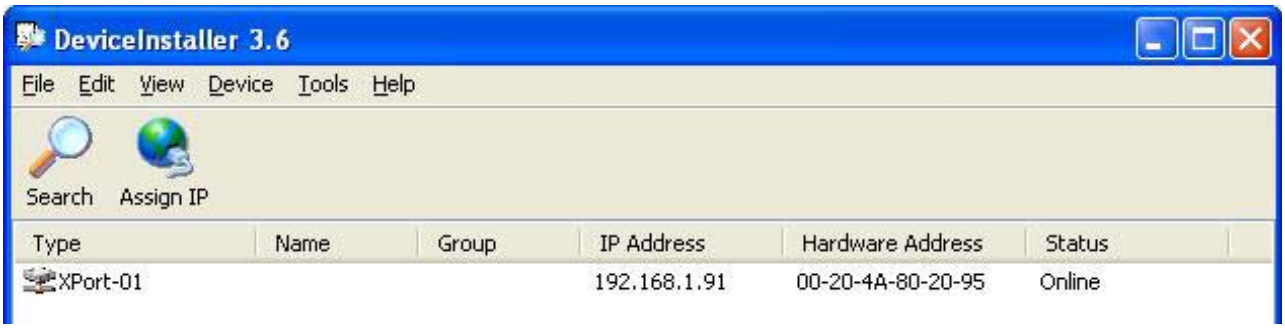
> **NOTE:** Microsoft NET program should be installed before the DeviceInstaller program installation. The program can be found on the enclosed CD in the **Microsoft_NET** directory. At startup, follow recommended settings by the installed wizard.

3.2.2.1 Setting fixed IP address

1. Click the **Start button** and choose **Programs ➔ Lantronix ➔DeviceInstaller ➔ DeviceInstaller** in order to start the application.
2. Click the **Assign IP** icon for a display of the next dialogue window displayed below.

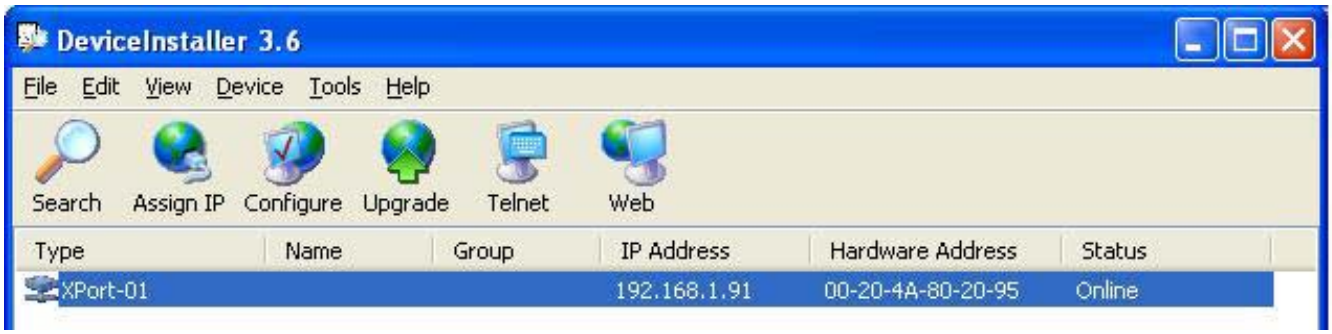


3. Write the Ethernet address or a MAC number (see a label), and click the **Next** button.
4. When assigning the IP address, choose the option below – **Assign a specific IP address** and click the **Next button**.
5. Write the **IP Address, Subnet Mask** and **Default gateway** and click the **Next** button.
6. Click the **Assign** button; if the IP address has been successfully set, *Completed successfully* is displayed.
7. Click the **Finish** button to restore the Deviceinstaller window.
8. Click the **Search** icon; if the IP address has been successfully assigned, the Type and the IP address are displayed.

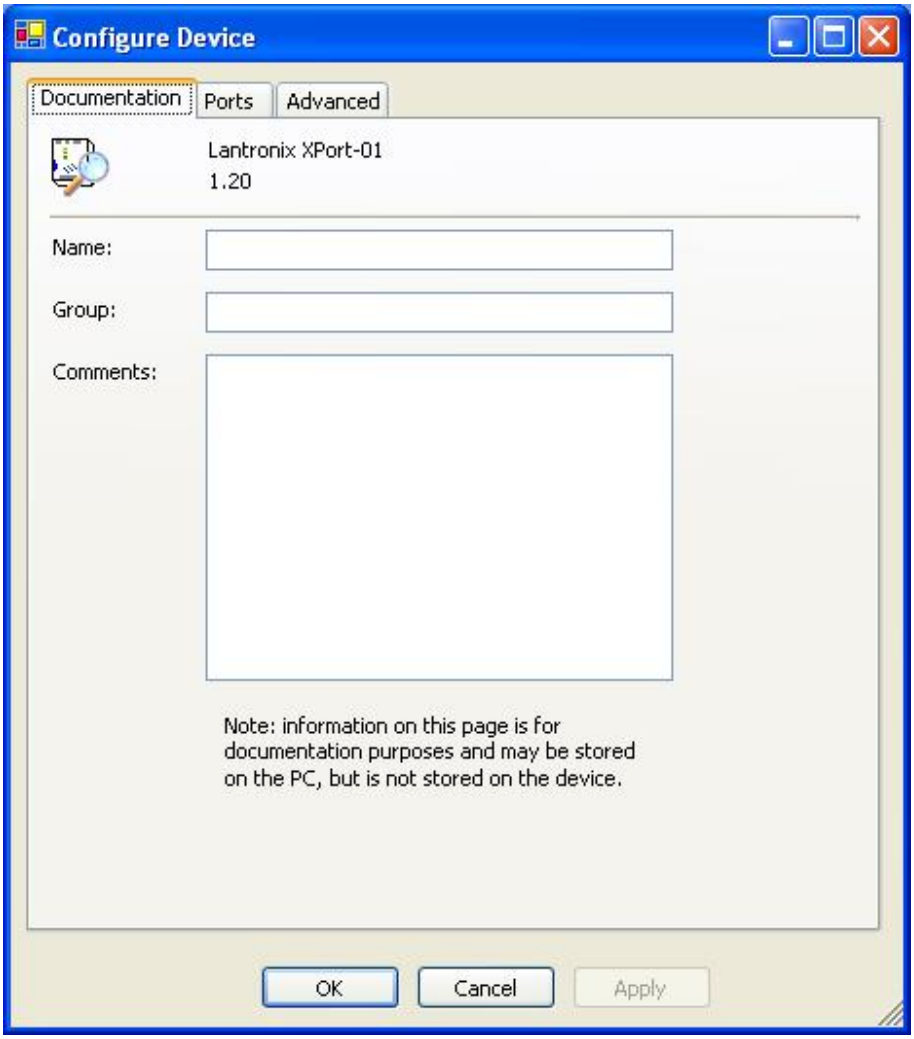


3.2.2.2 Communication interface configuration

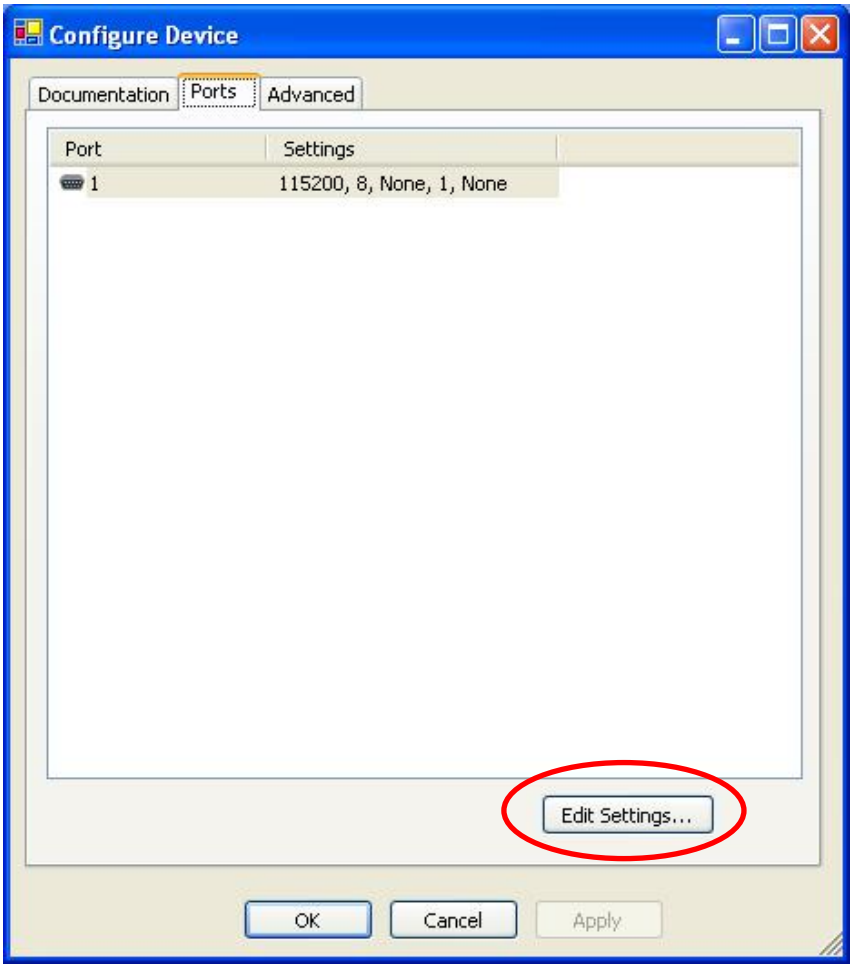
1. Click the selected interface type. A window below is displayed.



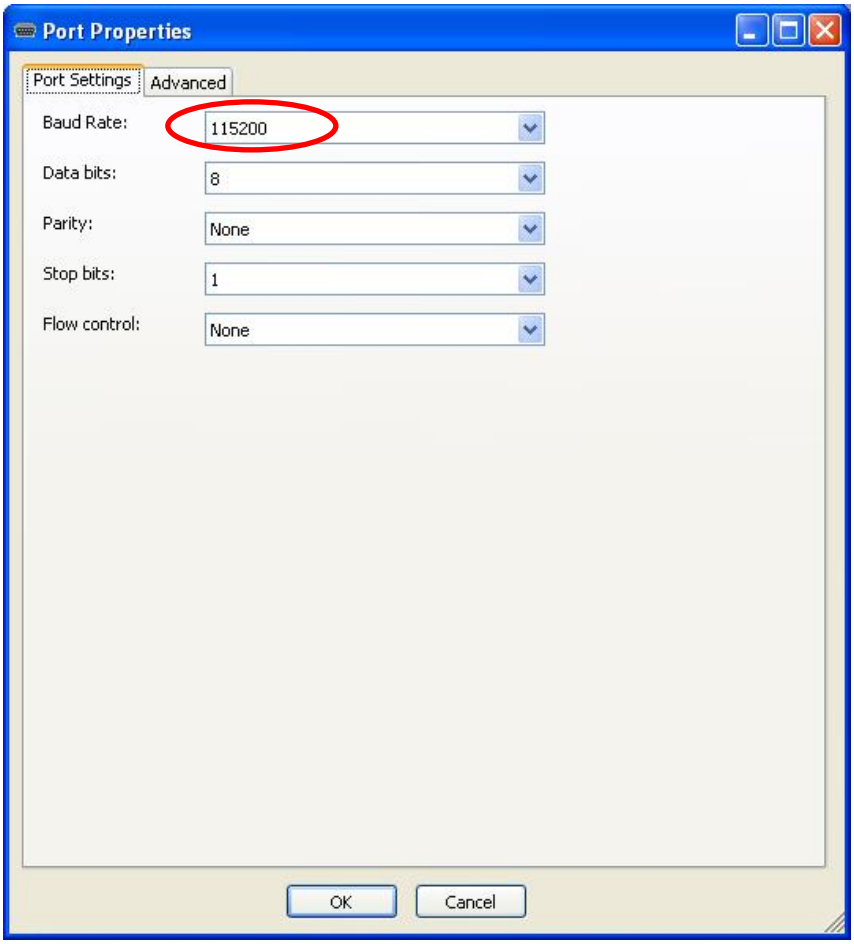
2. Click the **Configure** icon.
3. Your own remarks regarding the interface can be written on the **Documentation** tab (e.g. location, a type, etc.)



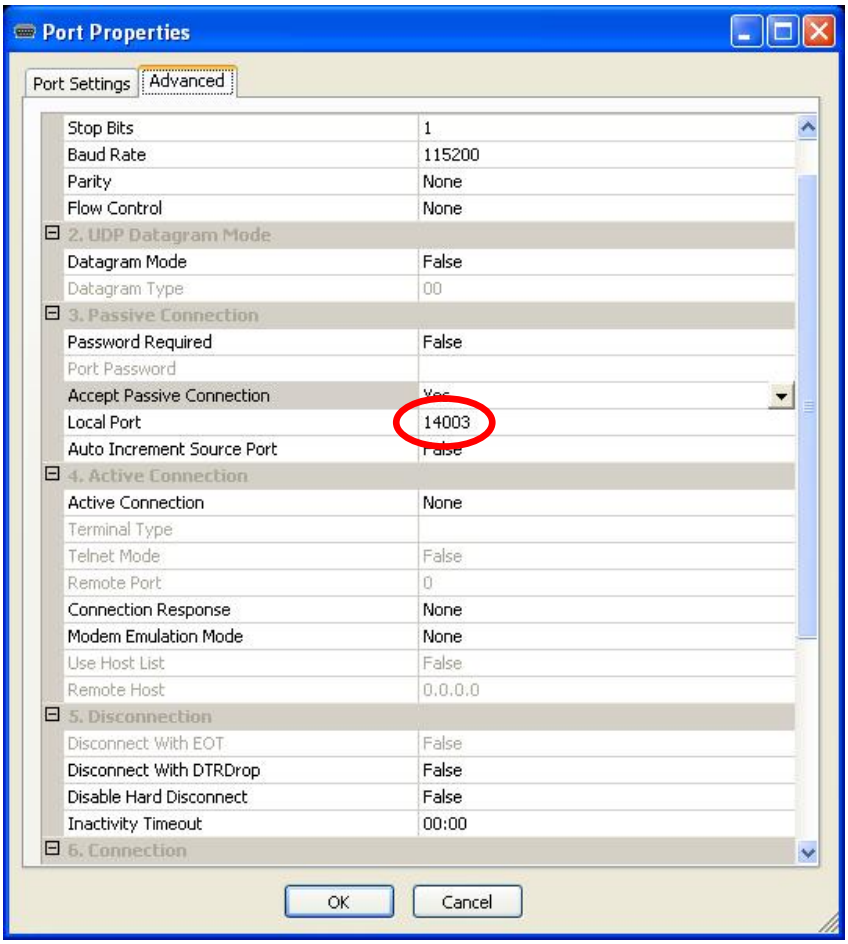
4. Set communication parameters on the **Ports** tab.



5. Click the **Edit Settings** key and write required communication parameters.. **WARNING!** The rate that is set in a window below is a maximal rate for communication of the program and the measuring instrument.



6. Set a corresponding local port on the **Advanced** tab. If the communication interface is used together with the Com Port redirector program (setting are described in continuation), the local port should be selected within the range from 14000 to 14010.



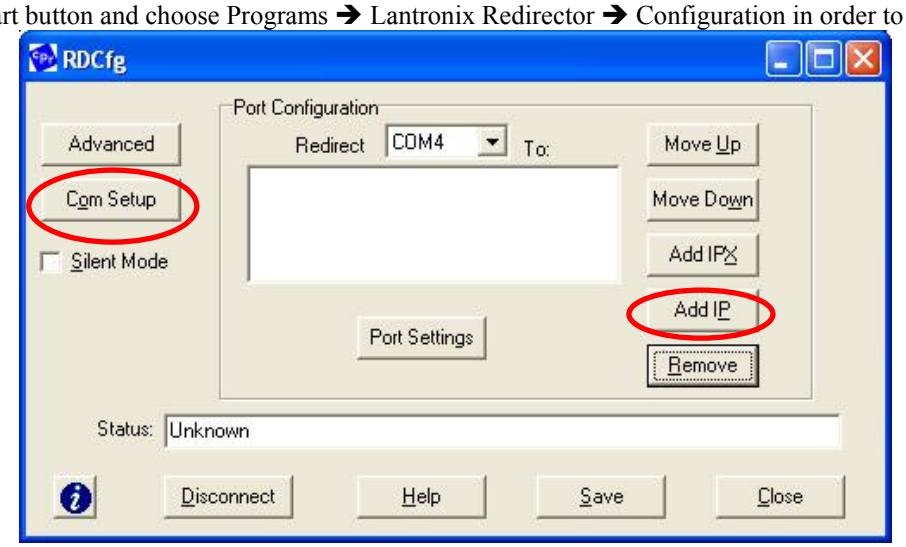
3.2.3 INSTALLATION OF COM PORT REDIRECTOR« PROGRAM AND SETTINGS

Insert an ***MI48x*** CD in your CD–ROM device.
Click the **Start** buttom and choose **Start** in a toolbar**.**
Find a CD and choose **red32bit.exe** in the **Redirector** directory (e.g.. **E:\ Redirector\red32bit.exe**).
Follow recommended settings by the installation wizard..
After the program installation, restart the PC.

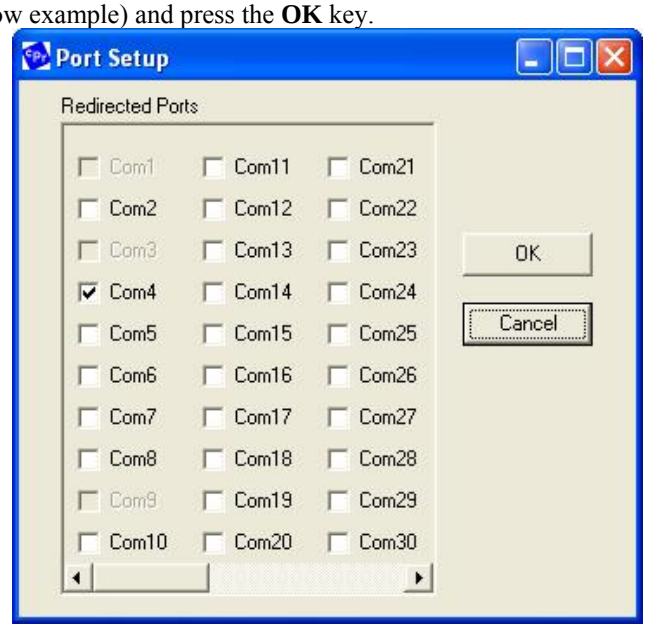
The Com Port Redirector program redirects data from the ethernet network to the virtual serial or COM port. In this way the access to the measuring instruments connected to the MI486 and in MI488 communication interfaces via ethernet networks is also enabled with the programs designed only for communication via serial connection (COM).

3.2.3.1 Setting of virtual com port

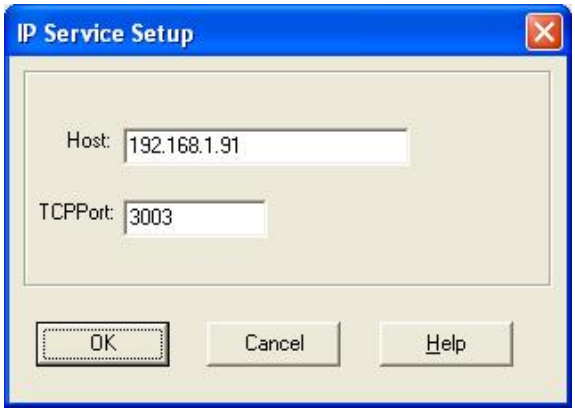
1. Click the Start button and choose Programs ➔ Lantronix Redirector ➔ Configuration in order to start the application.



2. Click the **Com Setup** key for a display of a dialogue window displayed below. Choose a free COM port – marked black (COM4 in the below example) and press the **OK** key.



3. Click the **Add IP** key for a display of the dialogue window displayed below. Write the IP address of the communication interface (it has been set in chapter 3.2.2.1) in the Host window, nad write for 11000 smaller digit in the TCPPort window as in case of local port setting in DeviceInstaller (chapter 3.2.2.2), e.g. 14003 / 3003. Then presss the **OK** button.



4. Click the Save key in the main dialogue window and confirm the data on the screen. In this way the virtual COM port has been successfully set..

After setting the virtual COM port restart the PC.

4 TROUBLE SHOOTING

4.1 MI485

If communication with the measuring instruments cannot be established, check the following:

- Is the interface connected to power supply? Is Power LED illuminated?
- Is the interface correctly connected with the PC? Is the right COM port selected?
- How is RS485 communication between the interface and the instruments connected?
- Are different addresses and equal communication rate set on the RS485 net for the instruments?
- Try to establish communication with the instruments by means of the MiNet program
- If communication rate of 115200 bitov/s is set, try to select a smaller rate, e.g. 57600 bits/s.

4.2 MI486 AND MI488

If communication with the measuring instruments cannot be established, check the following:

- Is the interface connected to power supply? Is Power LED illuminated?
- Is the interface connected to the ethernet network
- How is RS232 communication between the interface and the instrument connected?
- How is RS485 communication between the interface and the instruments connected?
- Are different addresses and equal communication rate set on the RS485 net for the instruments?
- Are the right IP address and a local port set?
- How is the Com Port Redirector program set? Is the local port number smaller for 11000?
- If communication rate of 115200 bits/s is set, try to choose a smaller rate, e.g. 57600 bits/s.

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