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# ES01 Embedded Ethernet to Serial Link Converter Setup

Application Handbook  
Version 1.0

# 1 Converter Setup

The converter setup consists of two parts : Ethernet interface setup and serial link setup. As the setup is done via the Ethernet interface, its communication parameters must be detected first.

After the instrument delivery, the built-in converter Ethernet interface setting is preset as follows:

- IP address : 10.0.0.101
- Subnet mask : 255.255.255.0
- Port: 2101
- Device Address : 249 (it is recommended not to change)

If the Ethernet interface setting is unknown, you must use the *Locator* ( see below).

To change the setting in the way you want, you must connect the instrument to a PC first. Usually, the setting is done at a site using a portable notebook/netbook directly connected to the instrument; in such case a crossover ethernet cable is necessary. Otherwise, you can connect to the instrument via a network switch or router.

**Note :** For an instrument addressing in an Ethernet network, so-called IP address is essential. But if the embedded ES01 interface converter built in the instrument is used it is necessary to distinguish under one common IP address between messages intended for the ES01 converter itself and messages for the host instrument. Therefore, the transmitted messages contain not only the common IP address, but so called *device address* too. The messages with the device address corresponding to the preset ES01 converter address are processed by the converter itself. On the contrary, other messages are simply passed through the converter to the instrument (and back). Therefore, it is possible (under one common IP-address) both to access the converter and to communicate with the instrument.

Messages that pass through the converter to the instrument contain the device address only, but its value is not essential for the instrument - the instrument typically responds to all received messages passing through the coverter. So while setting internal serial channel interconnecting the instrument with the converter, usually communication rate, protocol, parity and number of bits/stopbits only must be set properly.

## 1.1 Setup Procedure

Connect a crossed ethernet cable between a setup PC and the instrument. Now allocate IP address of 10.0.0.1 and subnet mask of 255.255.255.0 to the ethernet interface of the setup PC (Fig. 1). This can be done :

- in Windows 7 environment - Start/Control Panels/Network Connection Center and Share/Change Adapter Setup/Adapter Properties/TCP/IPv4 Protocol Properties
- in Windows XP environment - Start/Control Panels/Network Connection/Adapter Properties/ Vlastnosti odpovídajícího adaptéru/TCP/IPv4 Protocol Properties

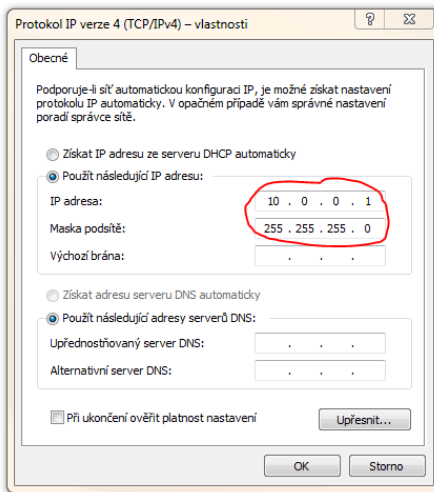


Figure 1: Setup PC Ethernet Interface IP Address and Subnet Mask Setting

Start ENVIS.Daq program <sup>1</sup>The program entry window appears :

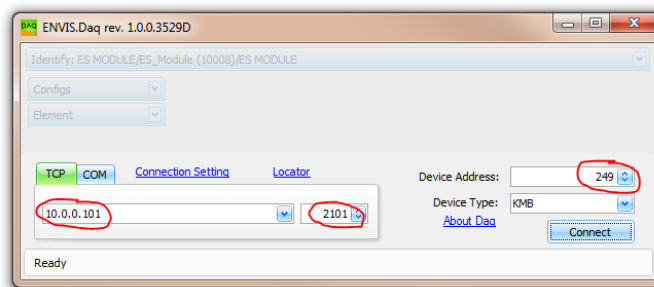


Figure 2: ENVIS.Daq Communication Parameters Setting for Connection with the ES01 Converter

Set communication parameters for connection with the instrument : IP address 10.0.0.101, port 2101 and device address 249 (fig.2). Push the “Connect” button for connection with the converter. The ENVIS.Daq main window appears :

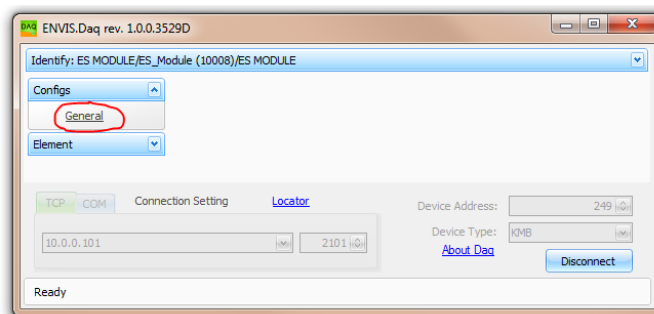
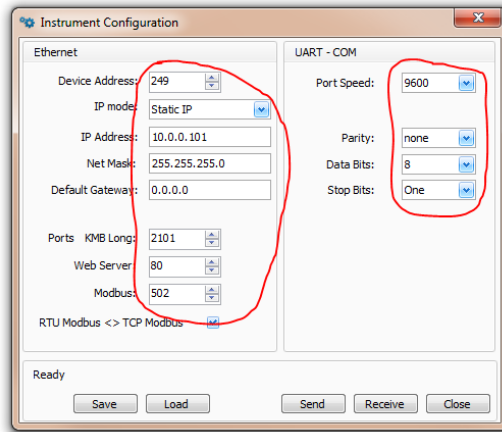


Figure 3: ENVIS.Daq - Main Window

<sup>1</sup>Before the first use, it is necessary to install the ENVIS.Daq program. The program and its manual can be downloaded from the manufacturers website [www.kmb systems.eu](http://www.kmb systems.eu).

Now choose the *General* to open converter setting window :



The converter parameters can be set here : device (=converter) address (249), static/dynamic IP address, IP address, subnet mask, default gateway , ports and internal serial link parameters. The serial port parameters must correspond to the internal serial link setting of the host instrument. The way of the instrument serial link setting is described in the instrument operation manual.

Finally, send the setting into the converter with the *Send* button.

## 1.2 Locator - Instruments Detection Wizard

For searching of instruments connected to an Ethernet link, the “Locator” wizard can be used. To start the Locator, push appropriate button (Fig.4).

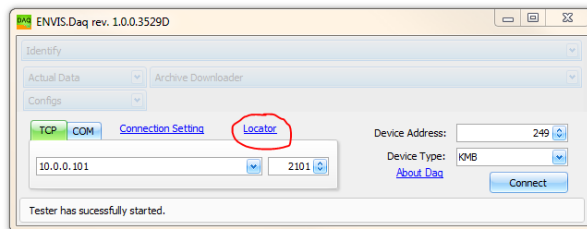


Figure 4: Locator Wizard

The Locator searches through local network and creates list of found instruments (Fig. 5) in the Locator window :

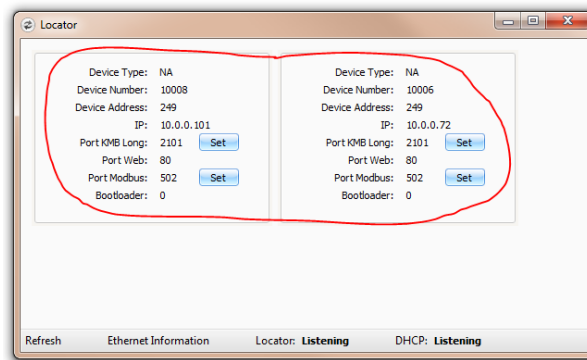


Figure 5: Locator Wizard Window

In the list all of found instruments connection parameters (IP address, port, device address) can be found.

Now you can select any of found instruments and transfer its communication parameters into the entry window of the ENVIS.Daq program with the *Set* button. By this, the instrument parameters including device address of the converter (249 in the example) are preset and, therefore, you can access to the converter after connection activation.

If you want to access the instrument itself you must change the device address (in order not to correspond to the preset converter device address) before connection activation. The instrument should react to any device address but the preset controller ( 249 by default ) one.