Communicate through the Ethernet or serial RS485 whit devices DAT9000 series

This application note shows how to connect to the devices of the 9000 series through the RS485 serial port or through an Ethernet network.

1. Connection to DAT9000 through Ethernet

• Connect the device to power supply (24Vdc);

• Turn ON the device;

• Connect DAT9000 to Ethernet by classic network cable (if a switch is used) or by cross cable (if a switch is not used);

• Open software Dev9k ver 1.8;

• Click on Tools-> Search from toolbar; (Fig. 1.1)

• Click on the button "**Search**" to search the controller on Ethernet network; (Fig. 1.2)

• Then, select the IP address and click the right button of mouse on IP address;

• Choose "**Set as Controller**" to connect device; (Fig. 1.3)

• Now the chosen controller is connected to the ethernet; (Fig. 1.4)
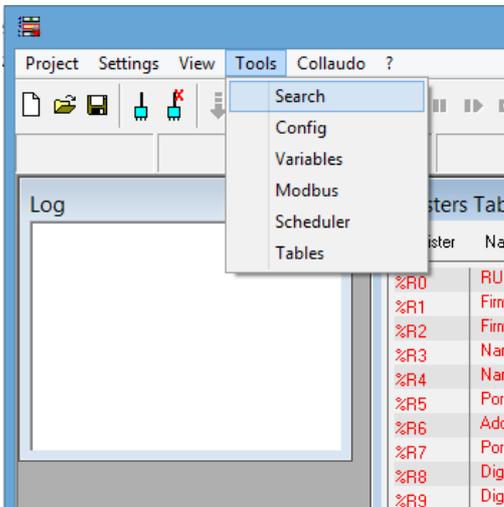
Fig 1.1: Tools → Search
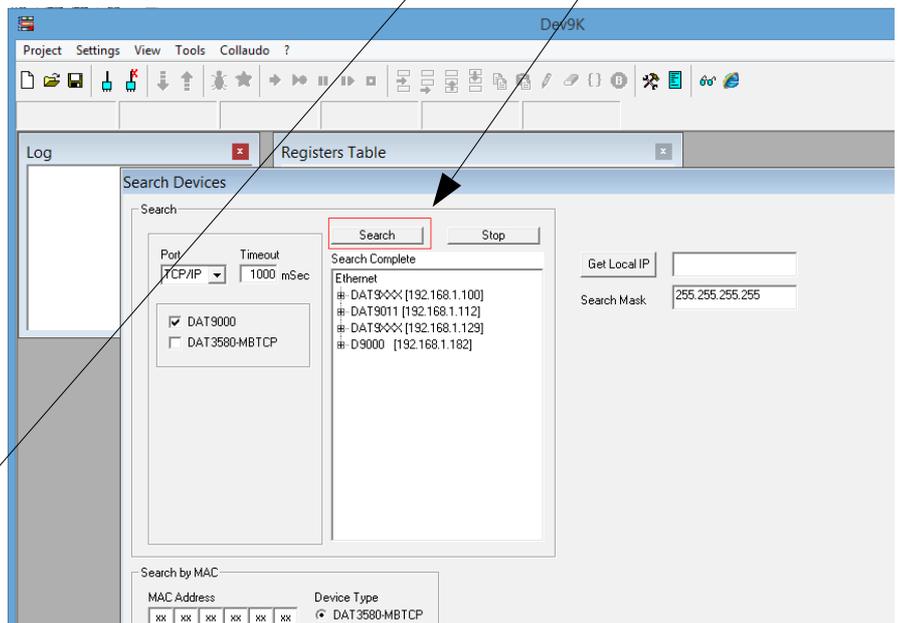
Fig 1.2: Search Devices
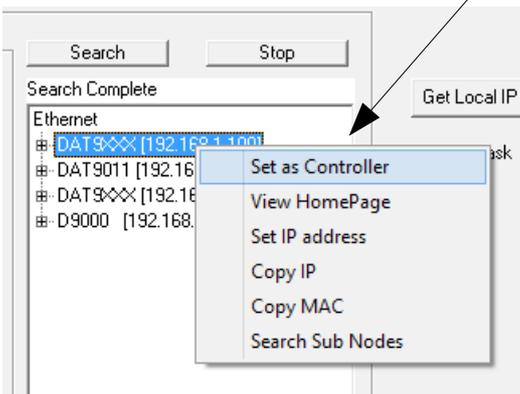
Fig 1.3: Select controller
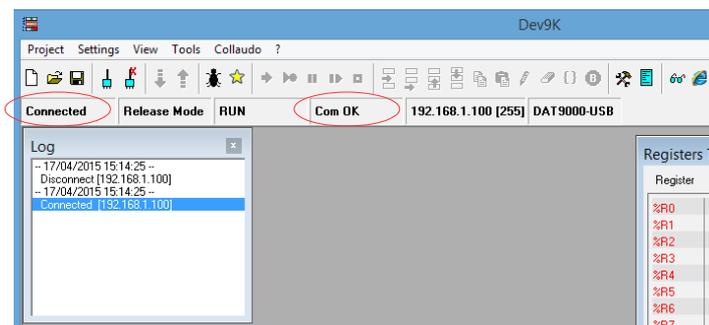
Fig 1.4: Controller connected

2. Connection to DAT9000 through serial port RS485

• Connect the device to power supply (24Vdc);

• Turn ON the device;

• Connect port "slave" (Port 0) of the DAT9000 to PC by a RS485 serial cable;

• Open software Dev9k ver 1.8;

• Click on Settings-> Controller from toolbar; (Fig. 2.1)

• In the section "Channel" select "COM Port"; (Fig. 2.2)

• Now, select COM port (on PC) and Baud Rate from list box menù;   (Fig. 2.2)

• In the field "Type" write Node ID of controller and select the right device from the list box (Fig. 2.3)

• Now, press "OK" to connect to the controller (Fig. 2.3 → Fig. 2.4)
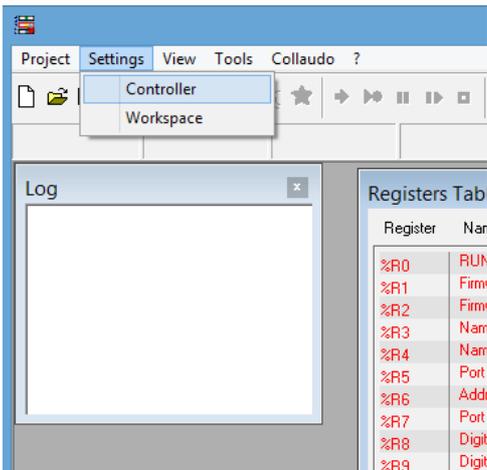
Fig 2.1: Settings → Controller
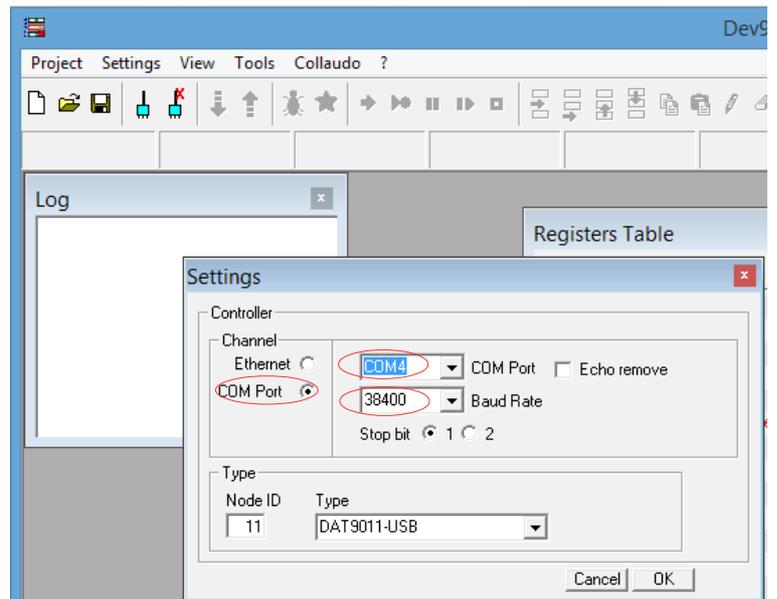
Fig 2.2: Select COM port and Baud Rate
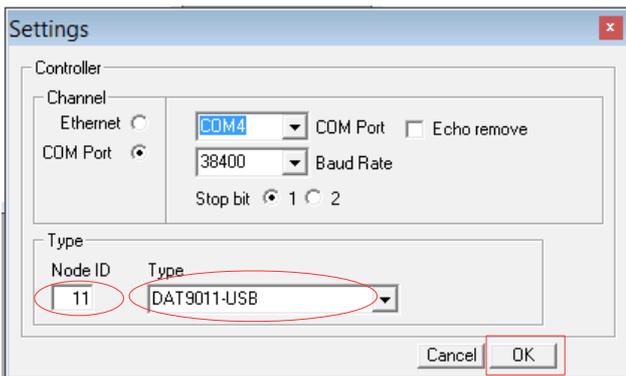
Fig 2.3: Write Node ID and Select Device Type
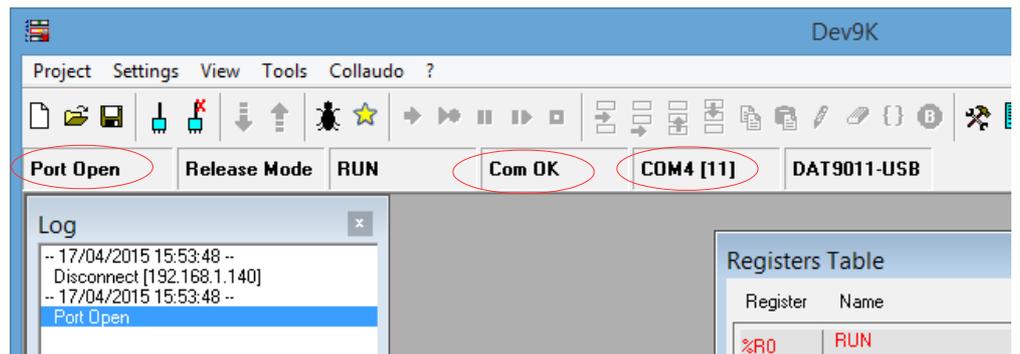
Fig 2.4: Controller Connected

3. Troubleshooting

• **I don't find the IP address of controller when I search it**

    a)   Check the ethernet cable;
    b)   The PC may work with multiple subnets. To find the controller
        in the network search the device in the same subnet of device
        in the field "Search Mask" in the window "Search" (picture on side).
        The PC and DAT9000 must be in the same subnet.
        When you find the device you can change the IP address.
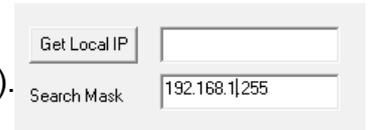
• **When I try to connect to the controller using the RS485 serial port, the system returns a message "Com Error"**

    a)   Check the serial cable;
    b)   Check if the COM port selected is correct → Check in "control panel" of Windows → selct
        the correct COM port;
    c)   Check if the Node ID (Modbus address) is correct → insert the correct Node ID;
    d)   Check that the COM port in use is not busy from another device → change the
        COM Port or disconnect the device that is using the com port;

• **When I try to connect to the controller using the RS485 serial port, I the system returns a message "Com TimeOut"**

    a)   Check if the Baud Rate parameter is correct → select the correct Baud Rate;

4. INIT mode

The connection mode of paragraphs 1 and 2 described above require the communication parameters of the device are known in advance. If the communication parameters are not known, how can be connect to the device?
All devices of 9000 series are equipped with the INIT mode. It's a particular mode to set the controller in order to access to the configuration with the default parameters:

•*Node ID: 10 (Modbus Address)*
•*Baud Rate: 9600*

By these parameters it is possible to access to the device in INIT mode to configure it or to see how the device is actually configured.

To enter the INIT follow the following procedure:

- Turn off the device;
- Connect the INIT terminal to GND terminal of DAT9000;
- Turn on the device again.
- Connect to the device via serial port with the default parameters as explained in section 2.

When the user finish to work in INIT mode:

- Turn off the device;
- Remove the connection between terminals INIT and GND;
- Turn on the device and access with known parameters or configured in INIT mode.