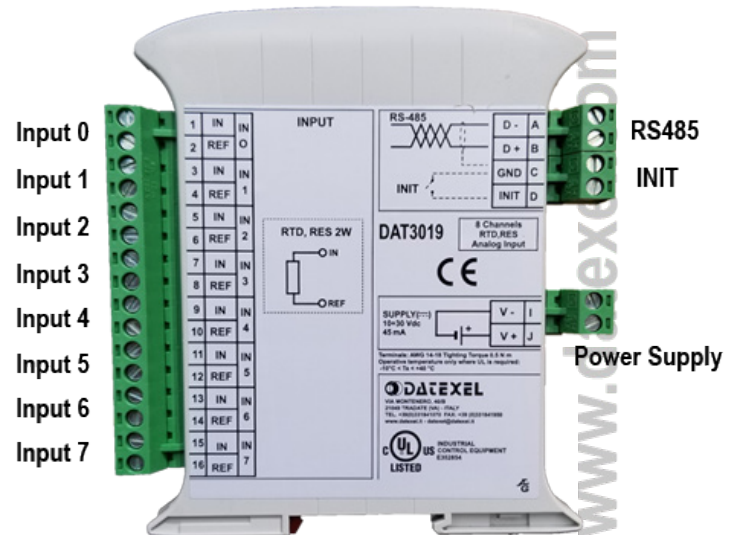# DATEXEL LLC

Setting up a Modbus RTU to measure a 2 wire RTD with a DAT3019.

Set Up the DAT3019.

1. Connect 24 Vdc to I and J.
2. Connect RS485 to A and B.
3. Connect 2 wire RTD pt100 to Input 0 on terminals 1 and 2.
4. If the communication parameters are unknown, short out the INIT connections C and D.
5. Power up the DAT3019 Modbus RTU Slave.

It is advisable to use the DAT3580 to connect the DAT3019 to the PC. The advantage of using the DAT3580 is that it will isolate your PC from the DAT3019. The DAT3580 options are USB, Ethernet and RS232. If the DAT3580USB version is used, install the USB drivers. If the DAT3580MBTCP or the DAT3580GW is used, make sure the ethernet parameters are compatible with the net and transmission of data over port 502 is allowed.

Set Up the PC.

1. Download the 3000-10000 Software from www.datexel.com download page.
2. Close all other software.
3. UnZIP the Modbus_3000_10000_setup software.
4. Run the 3000-10000 software.
5. To start the software click the English version.

www.datexel.com

Call 561 779 5660 for technical support.

Set Up Communication.

1. The software should automatically select the correct comms port. It is possible to override the comms port or refresh if you change the physical port.
2. Choose the correct Com port settings.
3. Click Open Com. The Port Status will change to green.
4. The default Baud rate is either written on the Label or 38400bps. If the INIT is shorted, the Baud rate will be 9600bps, RTU, Data Bit 8, Stop Bit1, Parity None.
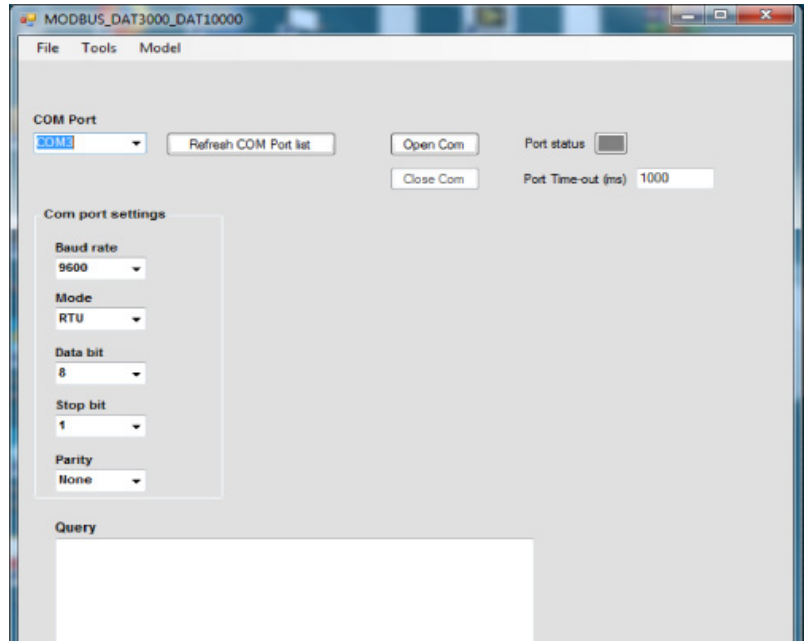
Selecting the Modbus RTU Slave DAT3019.

1. The green light only indicates the port is open. Even if the settings are incorrect the light will turn green.
2. Select Model and the drop down navigation will appear.
3. Select DAT3019 for RTD or Resistance.
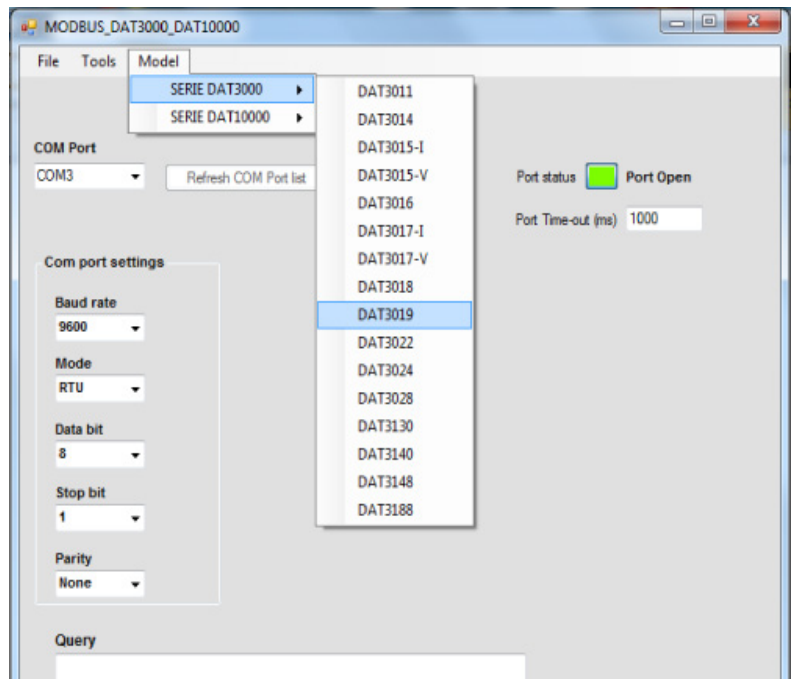
Setting the address of the DAT3019 Modbus Slave.

1. Change the Address to connect to 1 or what is written on the label.
2. Click "Read data" (Single poll).
3. The screen should now read the temperature of the RTD Sensor once.
4. If there is a function error, no CRC match, check Baud rate, RS485 connection or Modbus Slave Address.
5. This needs to be fixed before further progress. If you have not used the INIT on terminals C and D, it is highly recommended that you do now. Then return to Communication set up and set the settings to 9600bps, RTU, Data Bit 8, Stop Bit1, Parity None.
6. This will always be the correct setting unless it differs on the label.
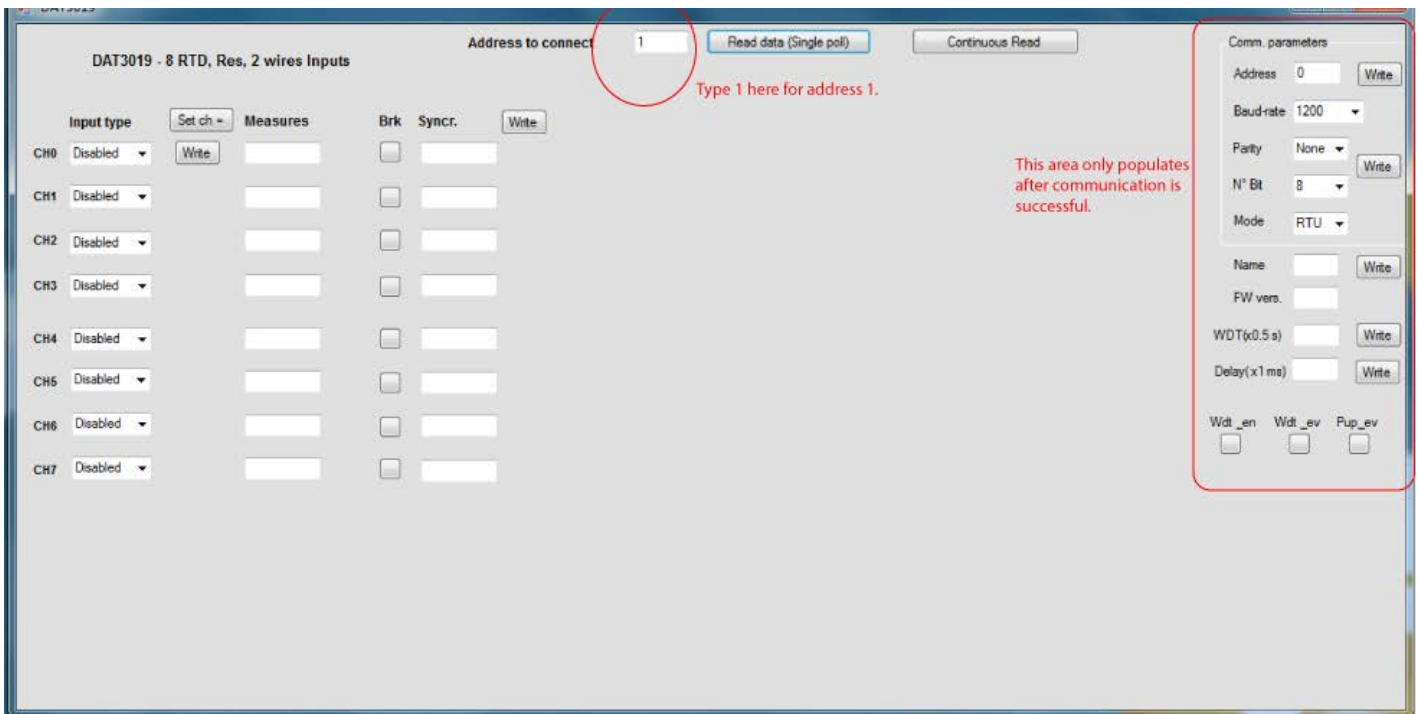
Feedback from Modbus Slave DAT3019.

1. If it is reading the correct temperature, you will see on the right side the default Comm parameters without the INIT link.
2. Click "Continous read" to see the temperature continue to update.
3. If you need to change the Comm parameters you can write in the boxes and write to the DAT3019 Modbus RTU Slave by clicking the write button.
4. Note, if you now remove the INIT short the DAT3019 RTD Converter will work with the new Comm parameters, not the default.
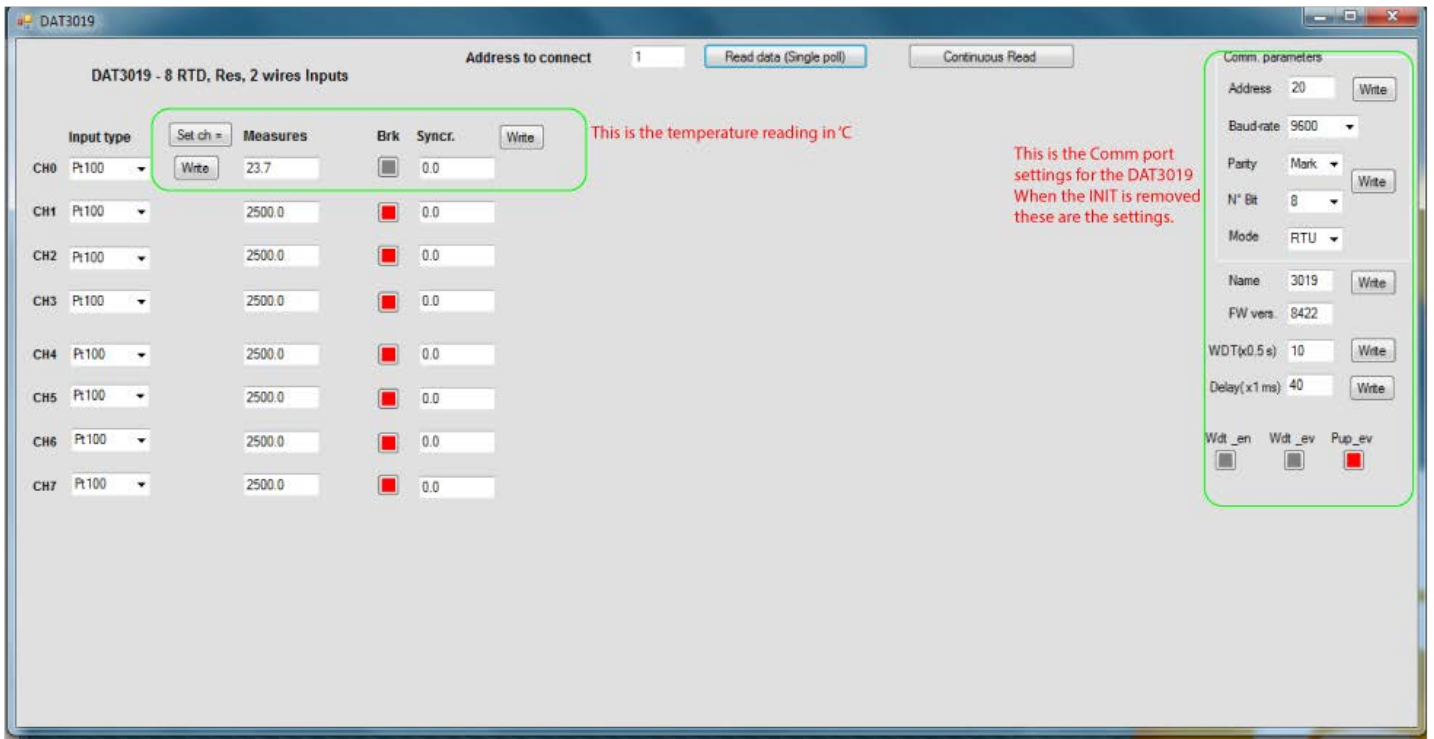
Explanation of Communication parameters for Modbus Slave DAT3019.

Address
The actual address of the DAT3019 connected.

Baud rate
The actual baud rate of the DAT3019 connected.

Parity
The actual parity mode of the DAT3019 connected.

N°Bit
The actual number of bit selection of the DAT3019 connected.

Mode
The actual Modbus modality (RTU or ASCII) set for the DAT3019 connected

Name
The string read from the DAT3019 of 4 ASCII characters used to name it example DAT3019.

FW Vers
The firmware version read from the DAT3019.

WTD (x0.5)
The watchdog time read from the DAT3019 is in steps of 0.5 seconds.

Delay (x1 ms)
The delay time between the reception of a query and transmission of the response. Expressed as steps of 1 millisecond.

Button Wdt_en
Indicates if the bit to enable the watchdog time of the device has been set: red indicates the bit is set, grey indicates the bit is not set.

Button Wdt_ev
Indicates if the watchdog timer event is occurred: red if the event occurs, grey if the event has not occurred. This condition is also signaled by the blinking of the led "PWR" of the device and the safe state of the digital outputs.

Button Pup_ev
Indicates if the Power up event has occurred: red if the event has occurred, grey if the event has not occurred. This condition is also signaled by the power-up state of the digital outputs.

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