

SMPI Modbus Instruments and SIMATIC PDM Single Point Version

Connecting SMPI instruments to SIMATIC PDM single point version using Modbus RTU

Objective:

- Become familiar with SIMATIC PDM single point version configuration tool

Equipment:

- Modbus instrument
 - Device instruction manual
 - SIMATIC PDM version 6.0
 - .pdm file
 - Serial Modbus interface
 - PC or Laptop
-

While every effort was made to verify the following information, no warranty of accuracy or usability is expressed or implied.

Overview:

SIMATIC PDM is the Siemens configuration software used to set up instruments. With the release of version 6.0, a single point version was introduced. The single point version uses a different method to connect to the field instrument, connecting to one instrument instead of supporting the advanced networking like all other versions of PDM.

For Modbus products, you have to use one of several icons that can be downloaded from the Siemens Milltronics Website at: www.siemens.com/processautomation.

This Application Guide discusses the following:

- Setting up SIMATIC PDM single point version.
- Using SIMATIC PDM special icons for access to Modbus instruments.

NOTE: Product information is available for free download at www.siemens.com/processautomation. Under *Process Instrumentation*, select *Level Measurement* to access level product information.

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Initial Setup

Installing SIMATIC PDM

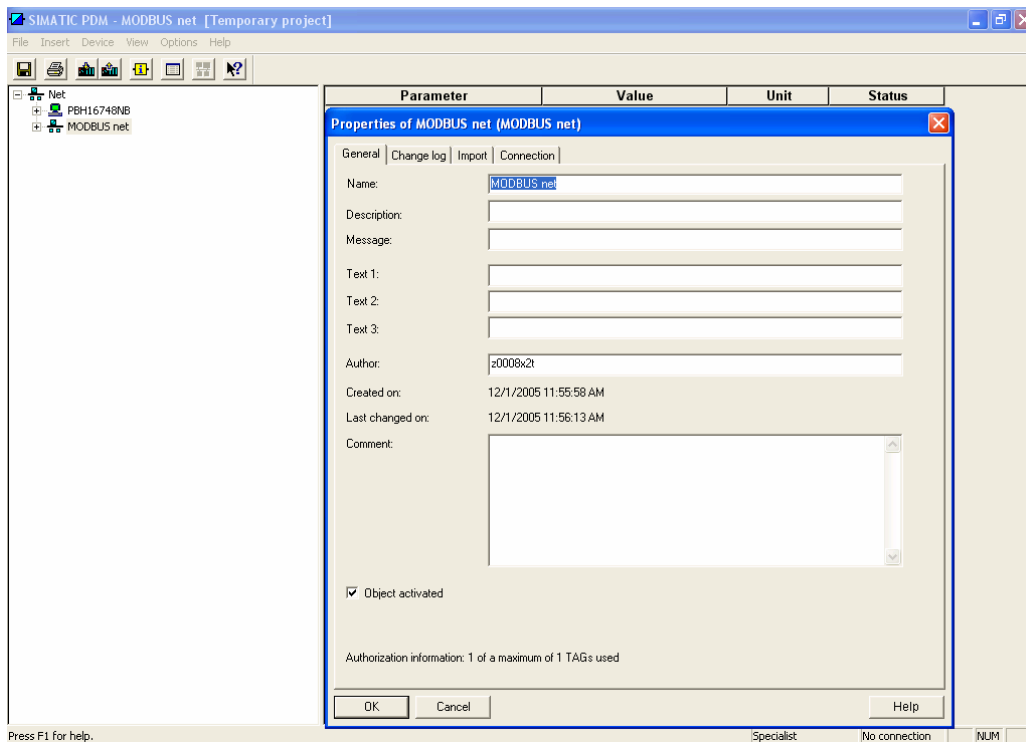
Using the defaults, install SIMATIC PDM as per the instructions on the CD. Be sure to insert the Device Library CD at the section called 'Manage Device Catalog.' All of the Siemens Milltronics Device Descriptions (DDs) must be selected.

When to Update the Device Description

SIMATIC PDM is shipped with the Device Descriptions that were current when the software was last released. Between releases of PDM, updates are done to the product and to the DDs. As a general rule, we recommend updating to the latest DD. See below for instructions.

Ensure that the DD matches the revision number of the product. For a list of all the current DD revisions, go to the product page for the instrument on www.siemens.com/processautomation¹. Click **Downloads** and find the DD revision that applies to the instrument, then check whether the device's version of SIMATIC PDM has the most recent DD. After a Modbus project is created, the DD revision can be viewed. See the section "Modbus Access" for details on launching a Modbus project.

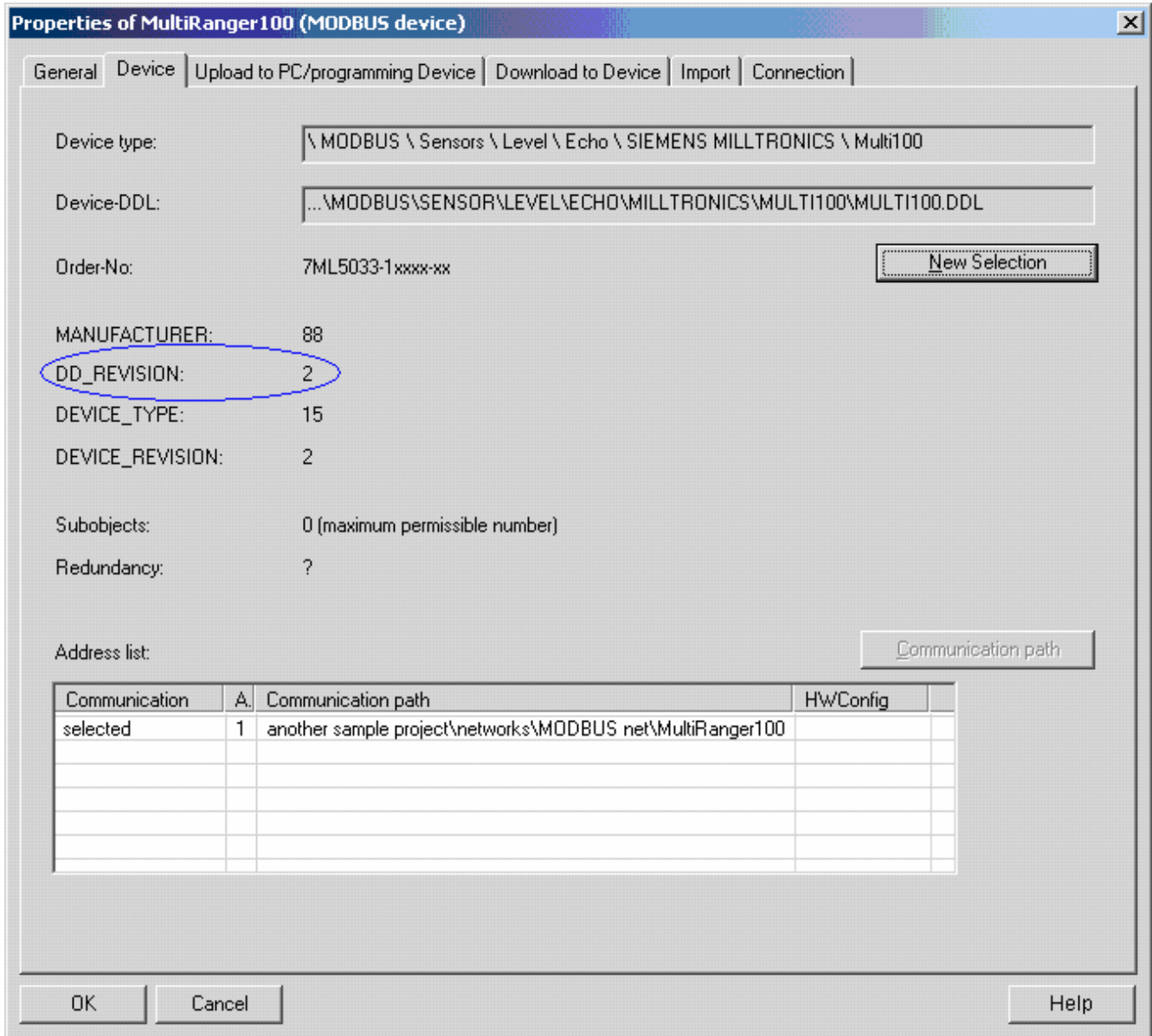
1. Right-click on the device (eg Multi 100) and select **Object properties**.



¹ For MultiRanger 100/200 and HydroRanger 200 go to <https://pia.khe.siemens.com/index.asp?nr=4937>.

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2. Select the **Device tab**.
 - Under the Device tab, the DD_REVISION will be displayed.



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Updating the Device Description

NOTE: Make sure that SIMATIC PDM software is not running while the Device Description is updated.

The latest Modbus device description for SIMATIC PDM is available for free download from the instrument's product page at <https://pia.khe.siemens.com/index.asp?nr=4937>:

1. On the product page, go to **Downloads** and select the appropriate DD.
 - For example, if you are connecting to a MultiRanger 100, go to the MultiRanger product page and select **MultiRanger 100 Modbus version ... for SIMATIC PDM**.
2. Save the ZIP file to a directory on the terminal and then double-click to open it.
3. Extract the files to a directory and then run the program called **Manage Device Catalog**.
 - This program can be found under "SIMATIC/SIMATIC PDM."
4. Click **Browse** to locate the extracted files.
5. Click **OK**.
6. Click **Select All**, then click **OK** to import the DD.

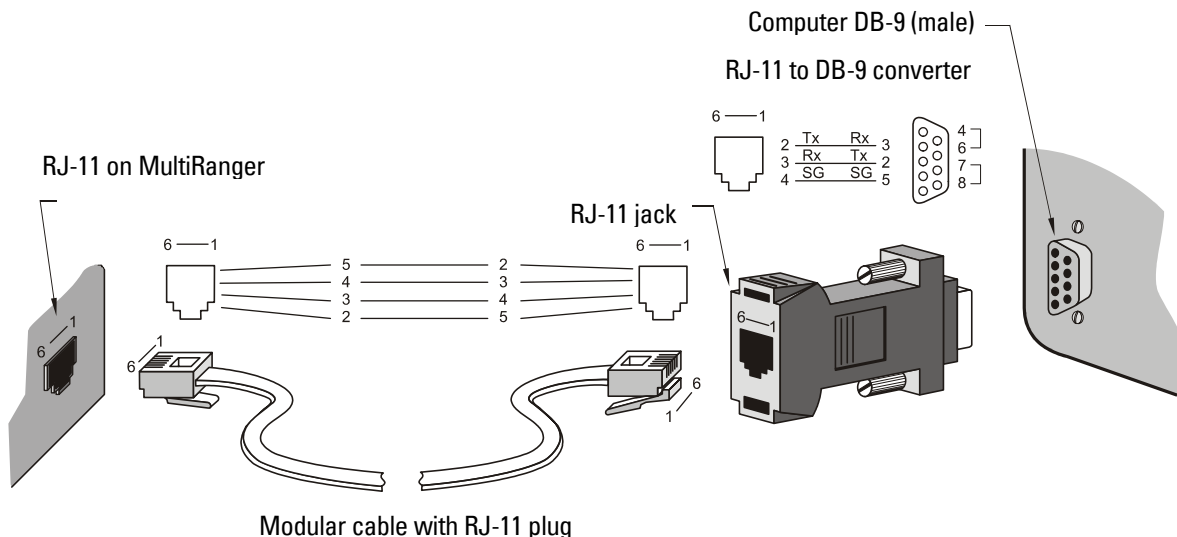
NOTE: The firmware version of the MultiRanger 100/200 or HydroRanger must be equal to or greater than 1.07.

Procedures

Wiring the MultiRanger 100/200, HydroRanger 200

The MultiRanger 100/200 and HydroRanger 200 have two ports. Port 1 is a RS-232 port for point-to-point connections, and it has default settings present. Port 2 is an RS-485 port for multi-point or long distance connections. PDM can be connected to either port. For this application guide, only the Port 1 connection will be shown.

1. Using the instruction manual as a guide, terminate the wires inside the device housing to the appropriate terminals.
2. Using the Siemens Milltronics DB-9 to RJ-11 converter, connect the MultiRanger to the serial port of your computer.



NOTE: Jumper pins 4-6 and 7-8 at the DB-9 connector.

Modbus Access

To access Modbus devices a .pdm file must be used. This file can be downloaded from the Siemens Milltronics website at: www.siemens.com/processautomation.

In future versions of PDM, these files will be located on the Device Library CD.

The files available are:

- Multi100_Com1.pdm
- Multi200_Com1.pdm
- Hydro200_Com1.pdm

These files assume the use of:

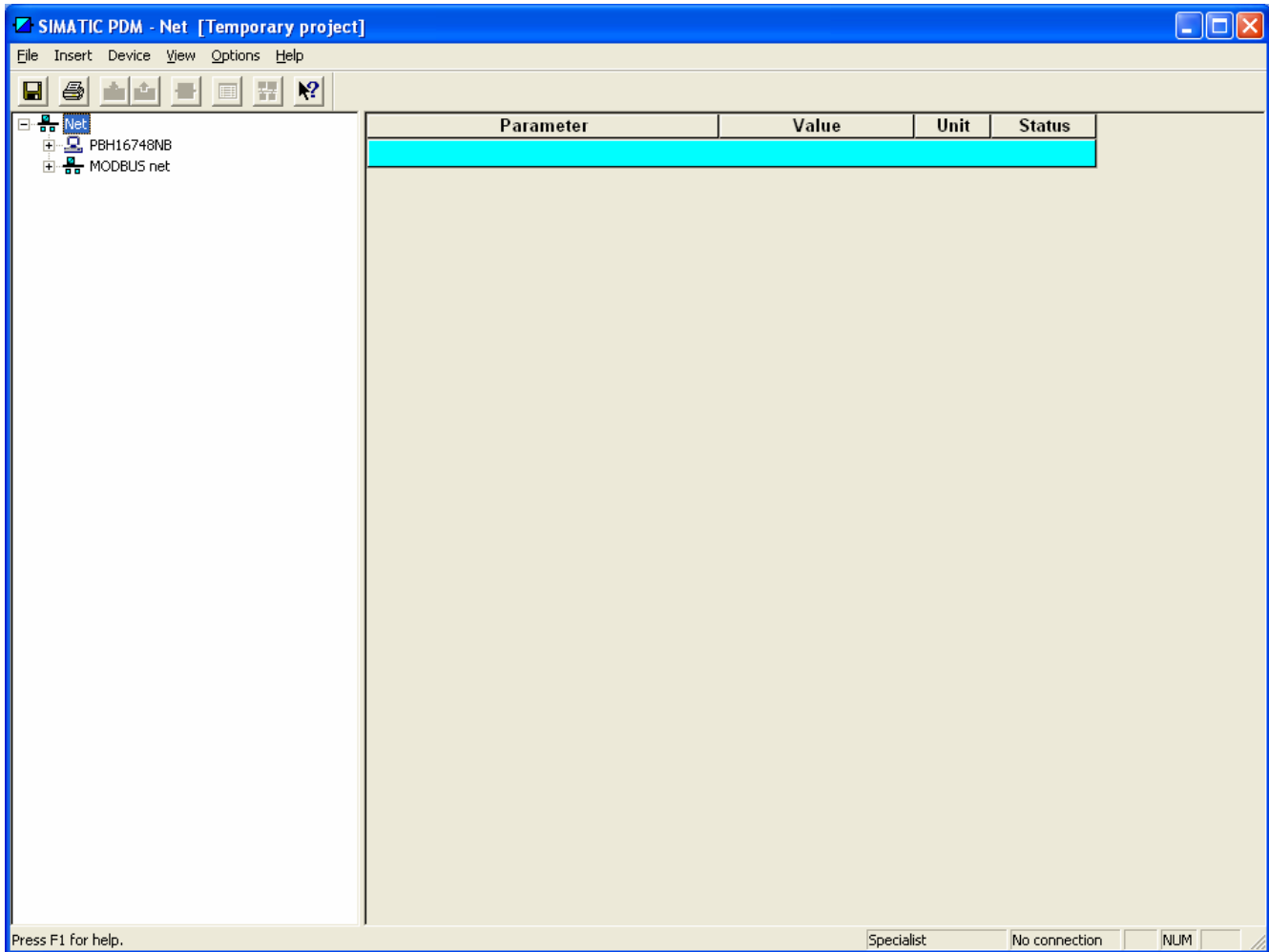
- Com1
- the default baud rate
- the default communication settings on the device

To change these settings, see “Modifying the Communication Port” and “Modifying the Baud Rate.”

To use the pdm files,

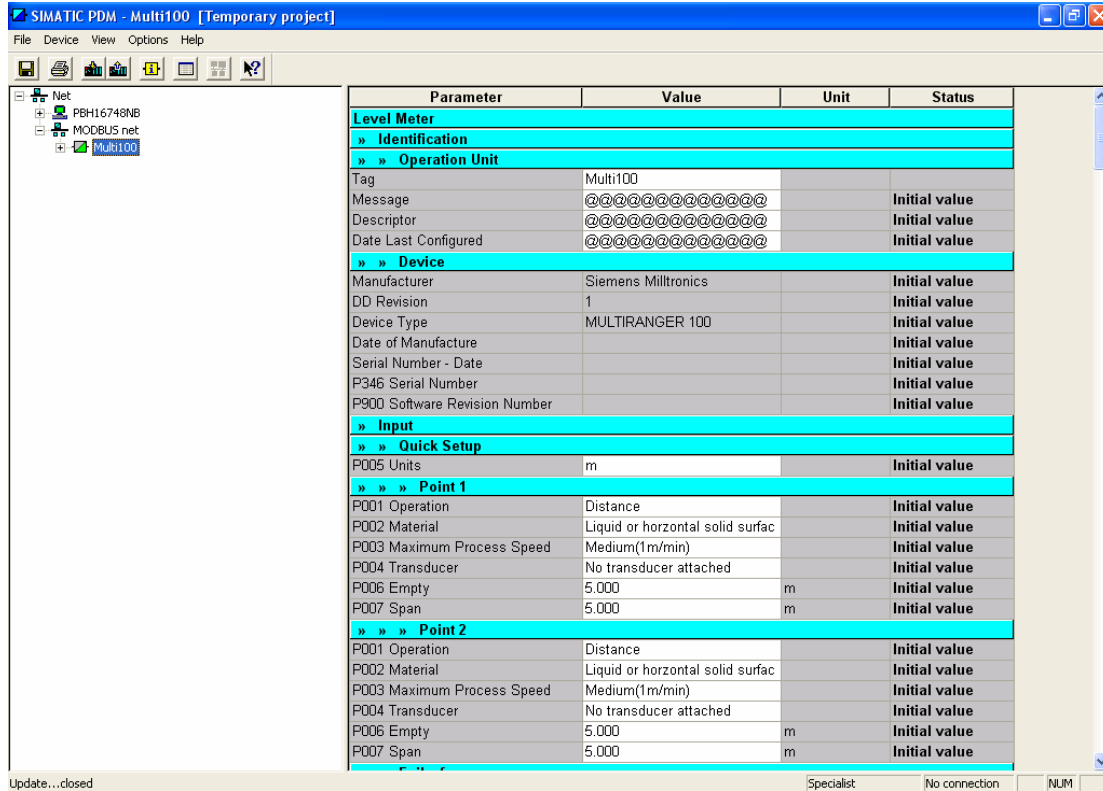
1. Save the files to the desktop.
2. Double-click on the files to launch PDM.

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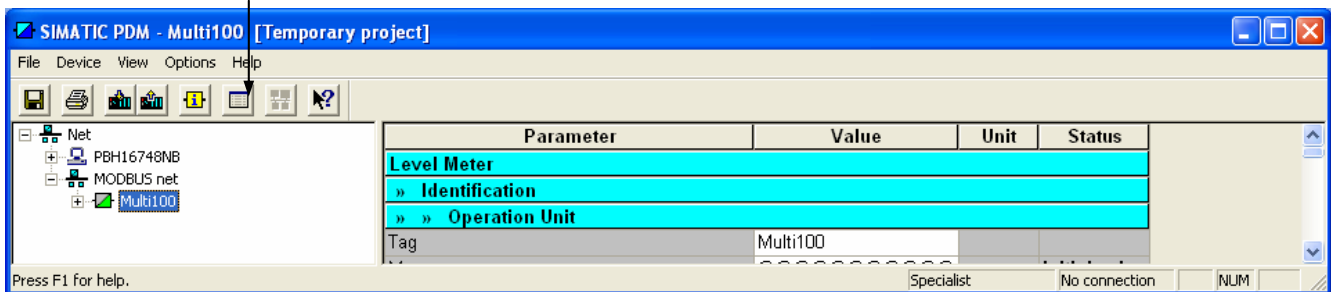
3. Click on the + sign beside the Modbus net icon to see the device.
 - The example below shows the MultiRanger 100.
4. Highlight the **Multi100** icon to display this screen:

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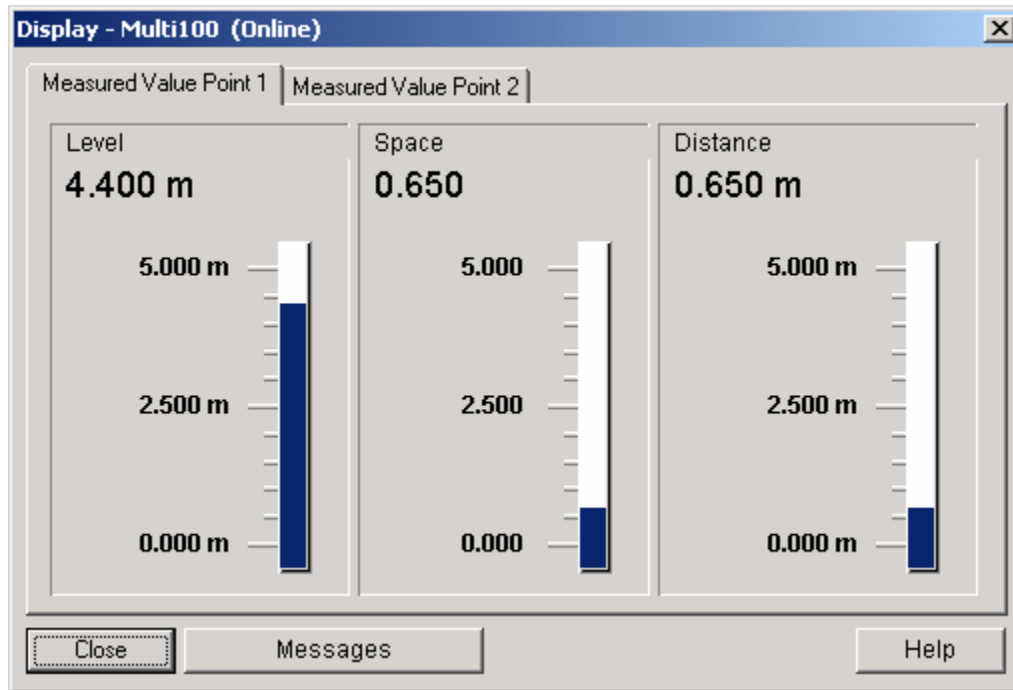


5. Click **Display Process / Measured Value** button to connect to the device and display real time information.

Display Process /
Measured Value button



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6. Click **Upload PG/PC** icon to upload data from the instrument.

The screenshot shows the SIMATIC PDM - Multi100 [Temporary project] window. The main area displays a table with the following data:

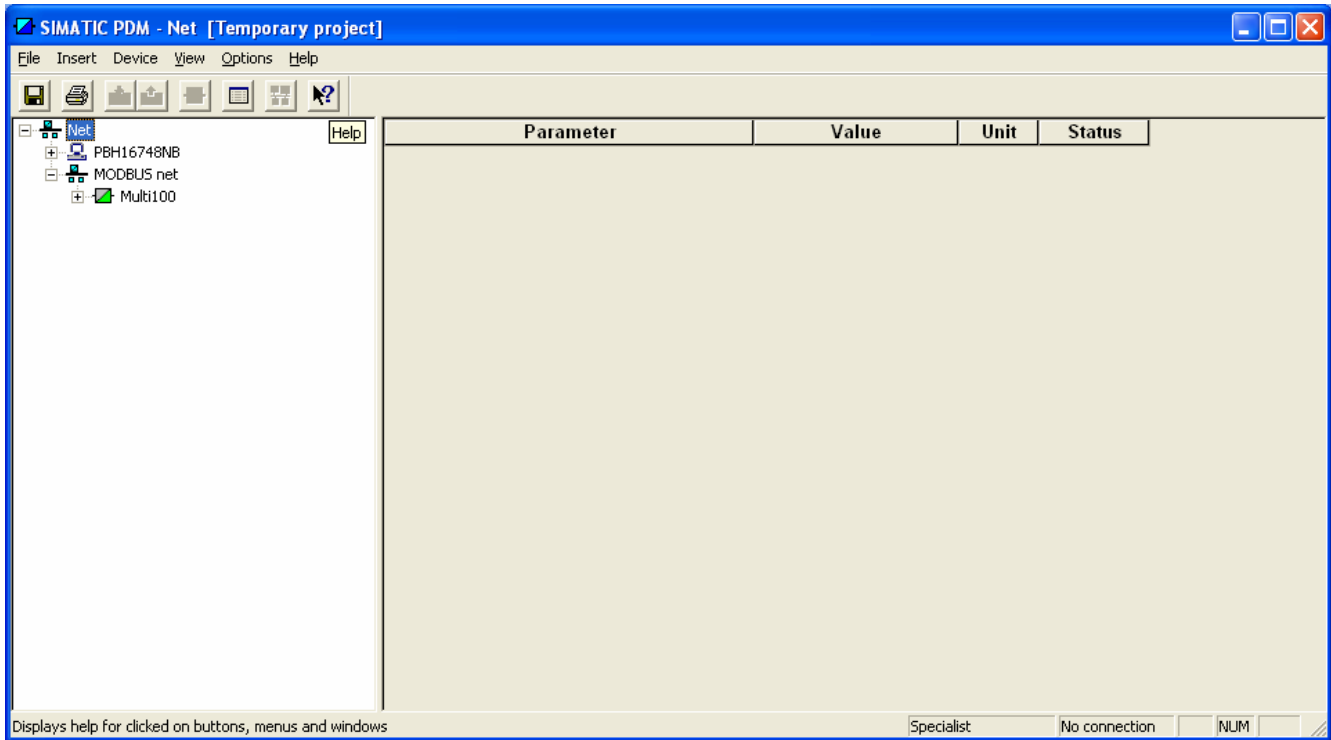
Parameter	Value	Unit	Status
Level Meter			
» Identification			
» » Operation Unit			
Tag	Multi100		
Message	@@@@@@@@@@@@		Initial value
Descriptor	@@@@@@@@@@@@		Initial value

At the bottom of the window, there is a status bar with the text "Loads the data of the selected object including all subordinate objects to the PC." and several status indicators: "Specialist", "No connection", and "NUM".

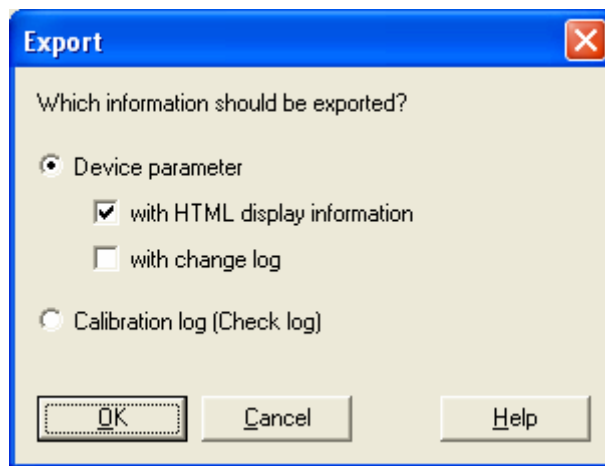
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To save the data:

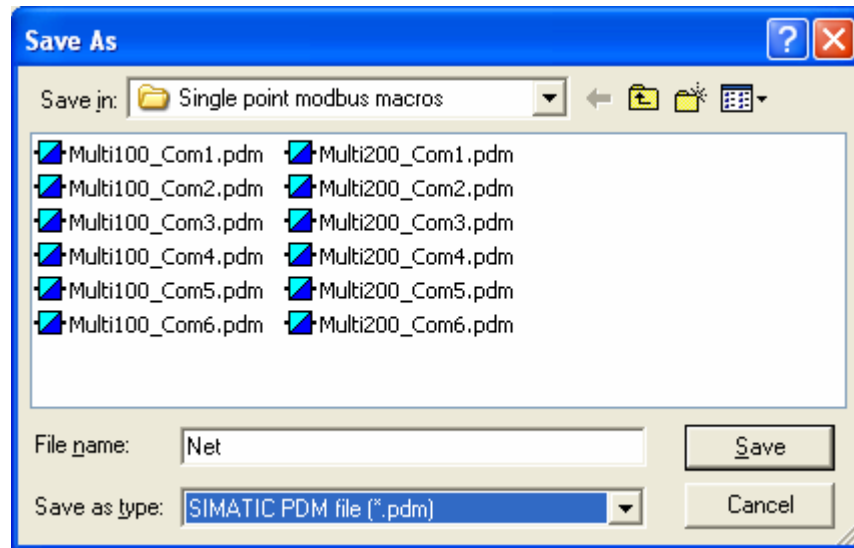
1. Highlight the **Net** icon on the left side of the screen.



2. Click on **File/Export**
3. Select **Device parameter** and check the “with HTML display information” box.
4. Press **OK**.



5. Select "Save as type: SIMATIC PDM file (*.pdm)."
6. Enter the filename and click the **Save** button.

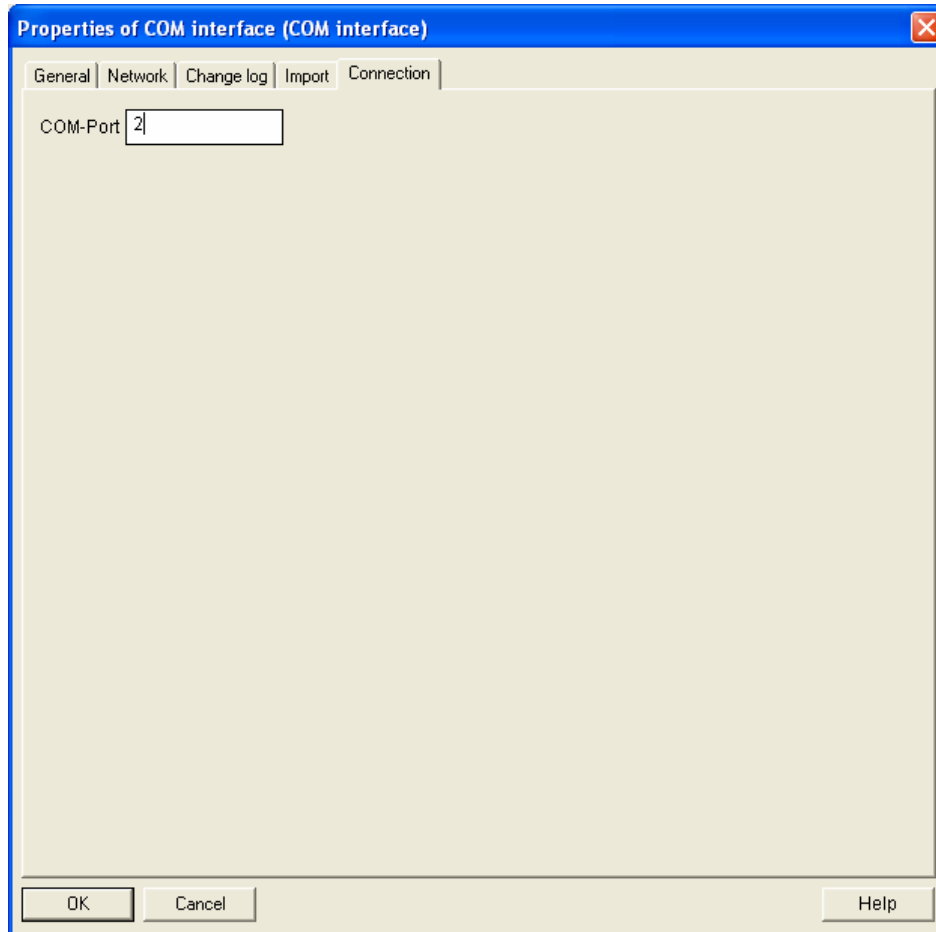


Modifying the Communication Port:

The .pdm files provided are set up to use Com 1. If the setup is different than this default, the files have to be modified.

To change the communication port:

1. Click the + sign under the computer.
2. Right-click on the **COM interface**.
3. Select 'Object properties.'
4. Select the **Connection** tab.
5. Enter in the correct communication port.



To save the file,

1. Highlight the **Net** icon in the left part of the screen.
2. Click on **File/Export** to save the file.

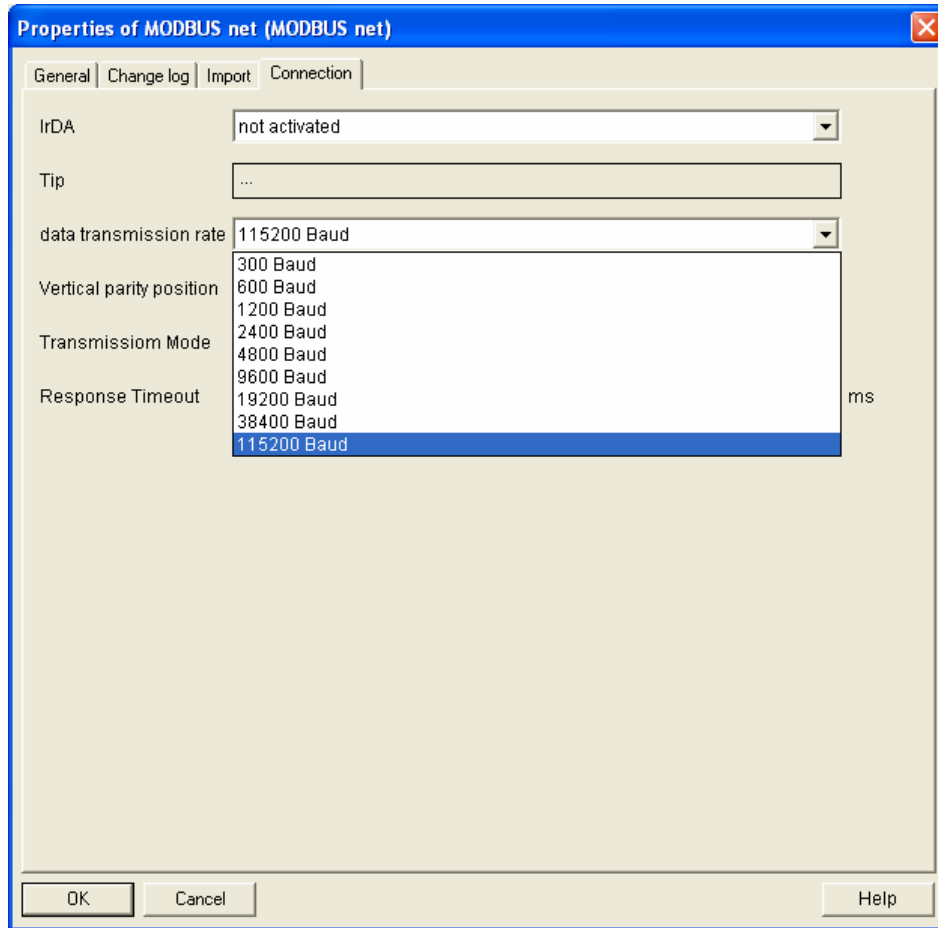
Modifying the Baud Rate:

The .pdm files provided are set up to communicate at 115.2 baud rate. This is the default baud rate for Port 1 (the telephone jack port) on the MultiRanger 100/200 and HydroRanger 200. If the setup is different than this default, the files will have to be modified.

To change the baud rate,

1. Right-click on the **Modbus** net icon.
2. Select **Object Properties**.
3. Select the **Connection** tab.
4. Select the baud rate that the instrument is set for.

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NOTE: For information on loading information into PDM, please consult PDM Help.