SIEMENS

APPLICATION GUIDE

AG060425

SmartLinx PROFIBUS and Step 7

Configuring a SmartLinx ready device with a PROFIBUS DP card in a S7-300 or S7-400 PLC

Objective:	• Familiarization with the steps required to configure a SmartLinx device in Step 7	
Equipment:	• SITRANS instrument • GSD file • SIMATIC STEP 7 ver. 5.2 (SP. 1)	• MPI/PROFIBUS Interface to PLC • Terminal screwdriver • PC or Laptop

Overview

SIMATIC STEP 7 is the Siemens programming software used to set up a S7-300 or S7-400 PLC.

This Application Guide discusses the following

- Running Hardware Config. to set up a network
- How to import a GSD file and when it is required
- How to view the data

Please note that the configuration of a MultiRanger 100 on a S7-400 PLC is for illustration purposes only. The process is similar for all applicable Siemens SmartLinx-ready products.

Required Steps

Step 1 - Locating the .gsd file.

The ***.gsd*** file for SmartLinx is located on the support disk that is shipped with the SmartLinx card. You can also download this support disk from the SmartLinx product page which can be navigated to from www.siemens.com/processautomation.

The ***.gsd*** file is located on the support disk in the \GSD directory. There are two different ***.gsd*** files depending on the product:

- for AiRanger or SITRANS LU products, use ***hms-1002.gsd***
- for all other products, use ***hms1003.gsd***

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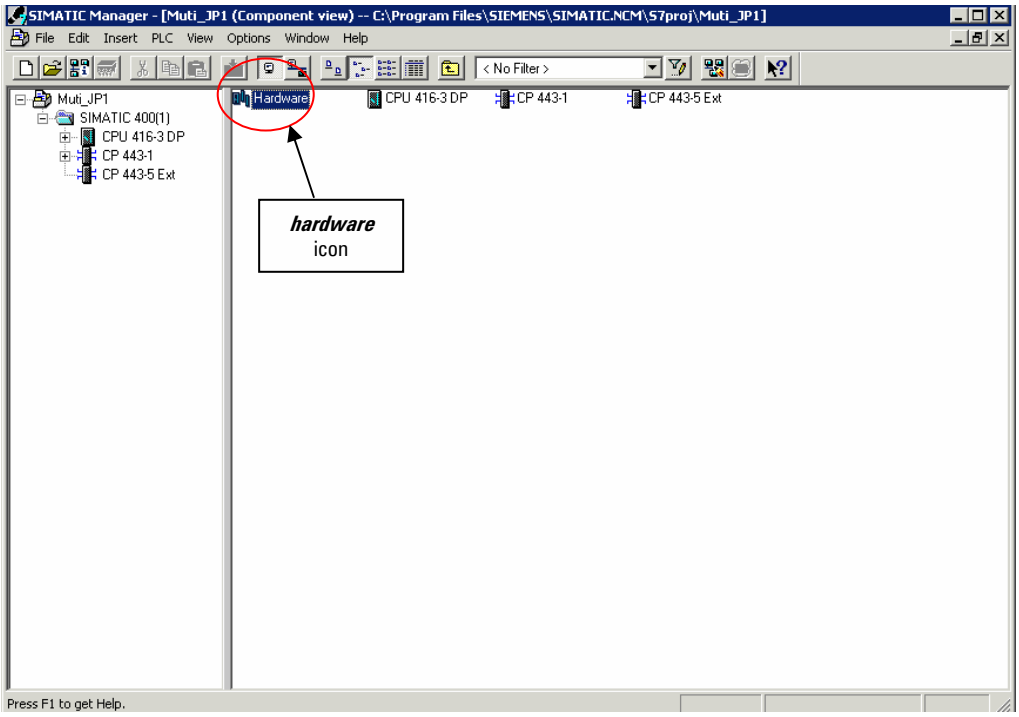
Step 2 - Getting into Hardware Config

Hardware Config is part of STEP 7 and PCS 7, both used for configuring the network. To run it, you must first run ***SIMATIC Manager*** and open a project.

1. Using the left side of the screen, navigate to a position that looks similar to the screen shot below:

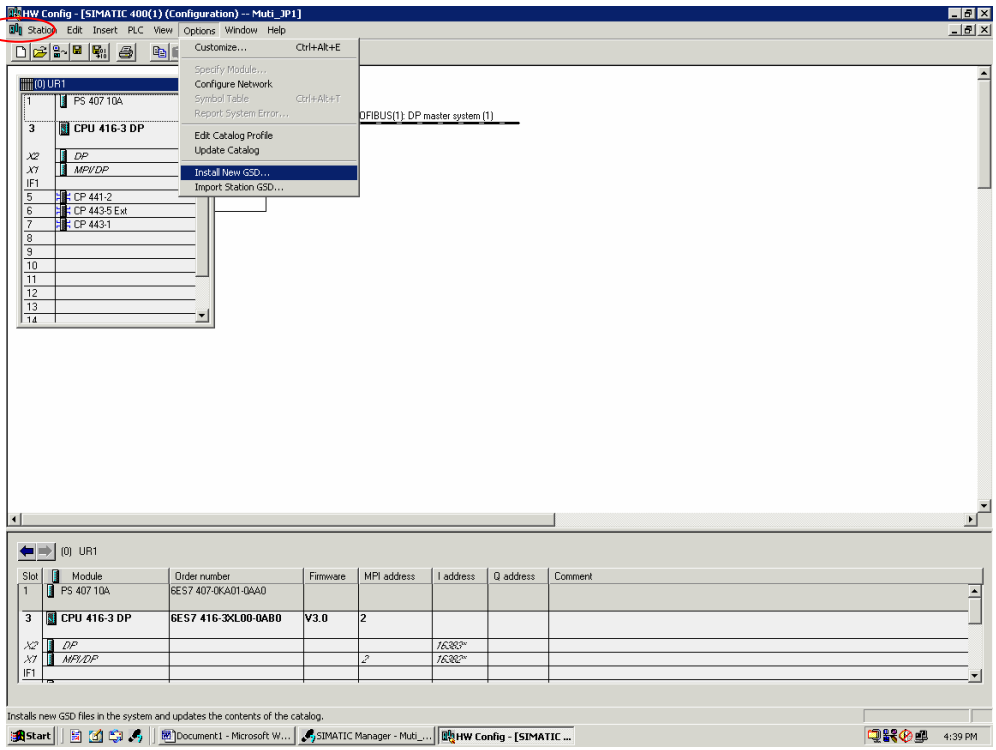


2. Double-chick the ***Hardware*** icon in the right window of the screen.

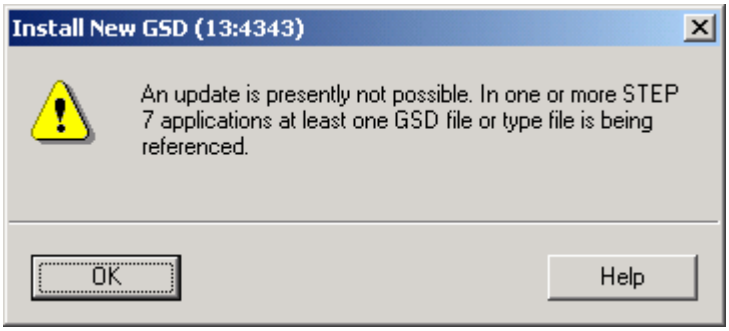
Step 3 – Importing the GSD file into STEP 7

1. From within Hardware Config, click ***Options/Install New GSD ….***

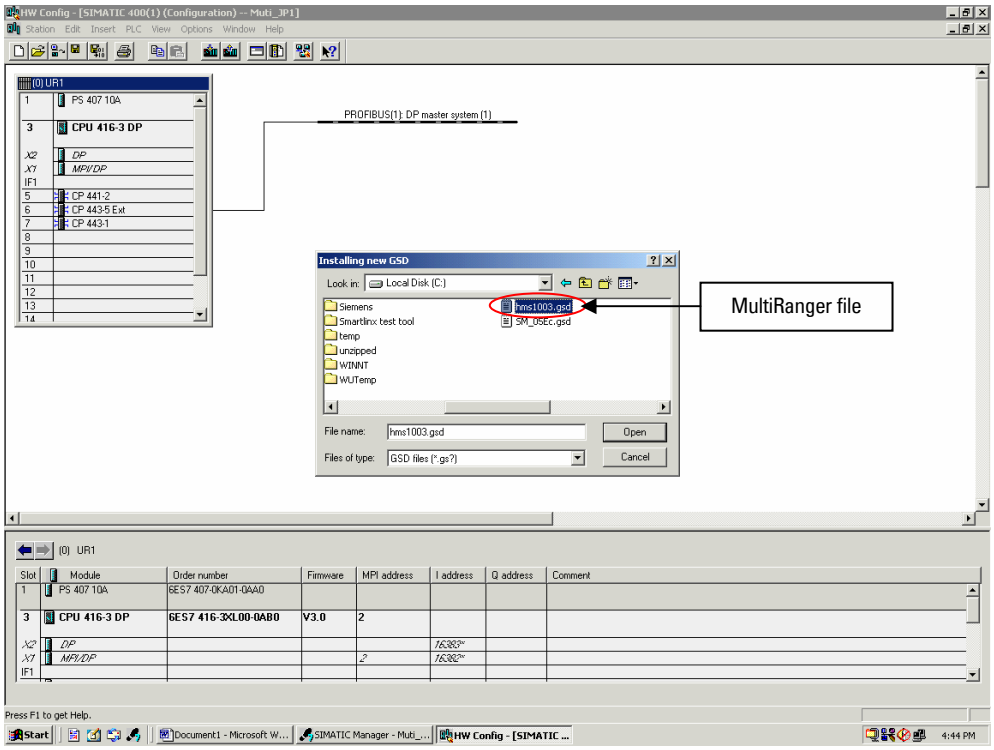
Click ***Station/Close*** if error message appears



2. If this error messages appears, close the open hardware project by clicking ***Station/close*** on the navigation bar.



3. Repeat Step 1 to import the ***.gsd*** file and navigate to the ***.gsd*** file.

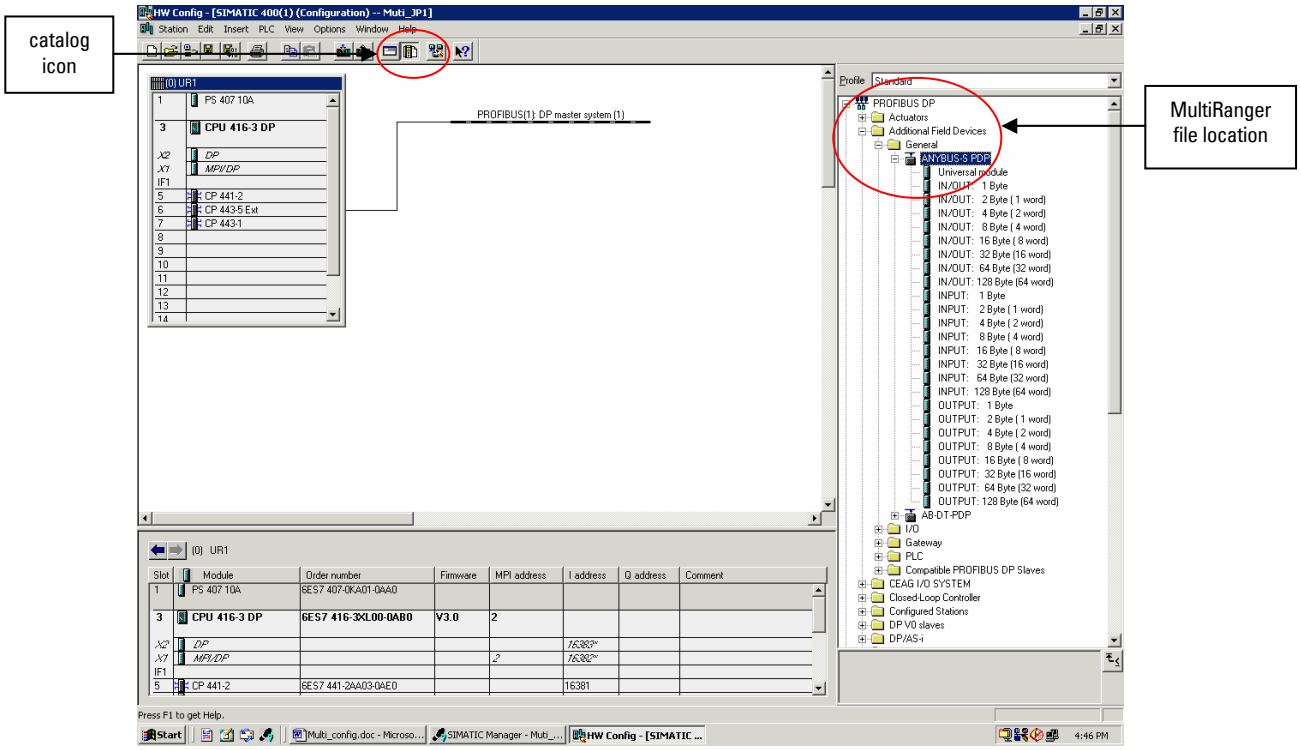


4. In this example, the MultiRanger ***.gsd*** file (***hms1003.gsd***) is selected.
5. Select ***Open*** on the Installation box to install the ***.gsd*** file.

Step 4 – Adding the device to the network

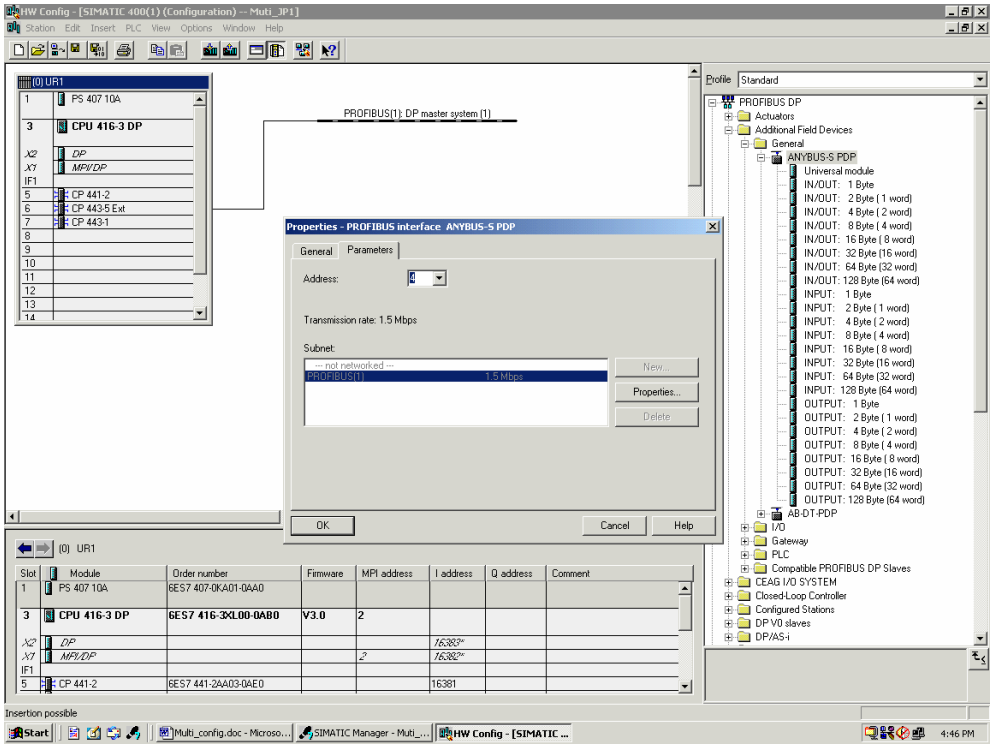
1. Open the ***Hardware*** catalog by clicking on the third icon from the right (mouse-over will verify).
2. The ***.gsd*** file for the MultiRanger is located in ***/PROFIBUS DP/Additional Field Devices/General/ ANYBUS S PDP***.

> **NOTES:**
> - Please note that the MultiRanger file is ***ANYBUS-S PDP***.
> - For the AiRanger or SITRANS LU instruments, the ***.gsd*** is in the same location, but is called ***AB-DT-PDP***.



3. Highlight the PROFIBUS DP network where the MultiRanger is going.

4. Highlight ***ANYBUS-S PDP*** and drag it to the required PROFIBUS DP network. Dragging it into the network, opens the ***Properties Interface*** box



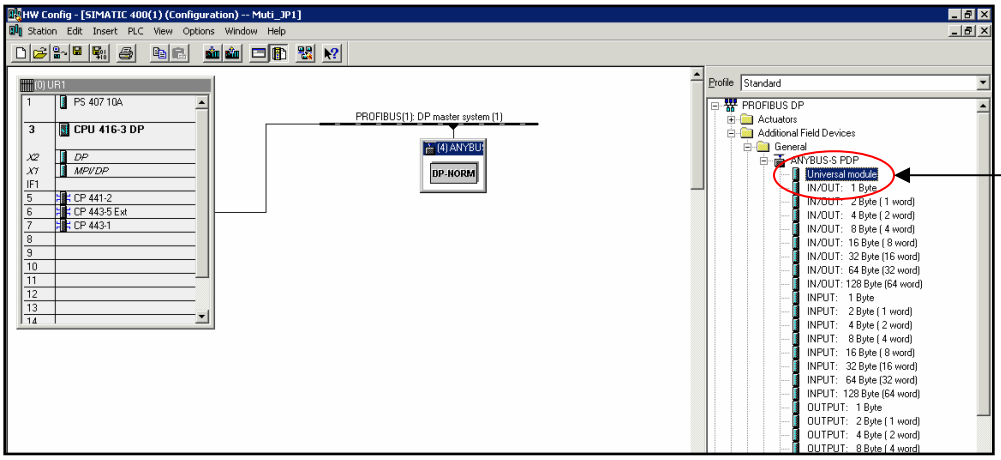
NOTE: Note that the address of the MultiRanger on the PROFIBUS DP network must be known.

5. Place the MultiRanger address at ***Address 4***. (Lab demo only)
6. Highlight the selected ***PROFIBUS DP network***, and then click ***OK*** on the Properties dialog box.

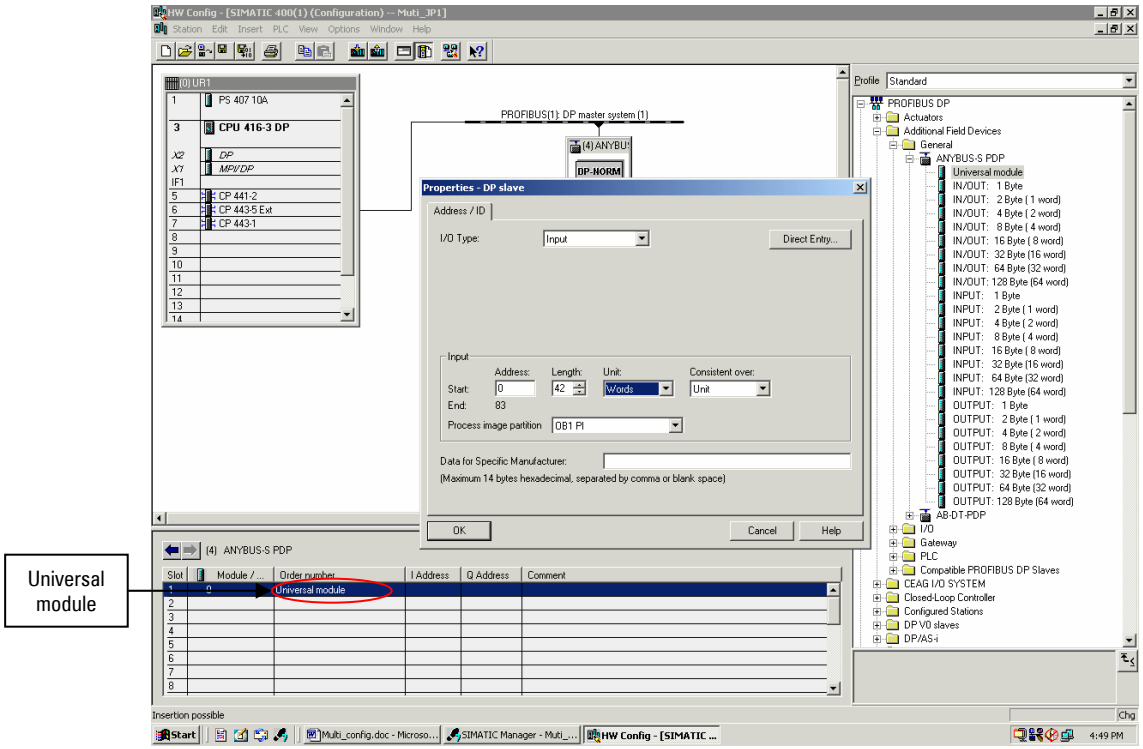
Step 5 – Configuring the MultiRanger on the network

Now that the MultiRanger is on the network, the input and output sizes must be set up. Begin by defining two ***Universal Modules***.

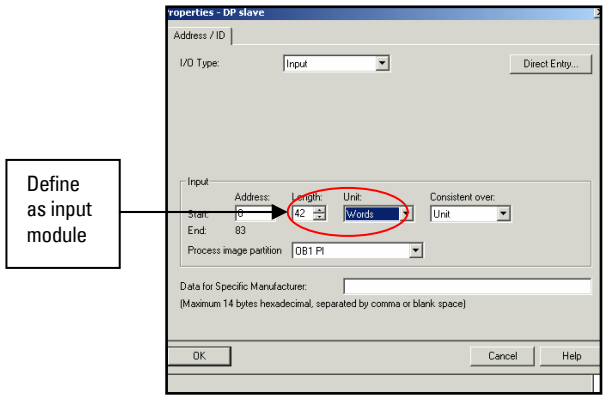
1. Select the ***Universal Module*** icon and drag it to ***slot 1*** of the ***ANYBUS S PDP*** rack.



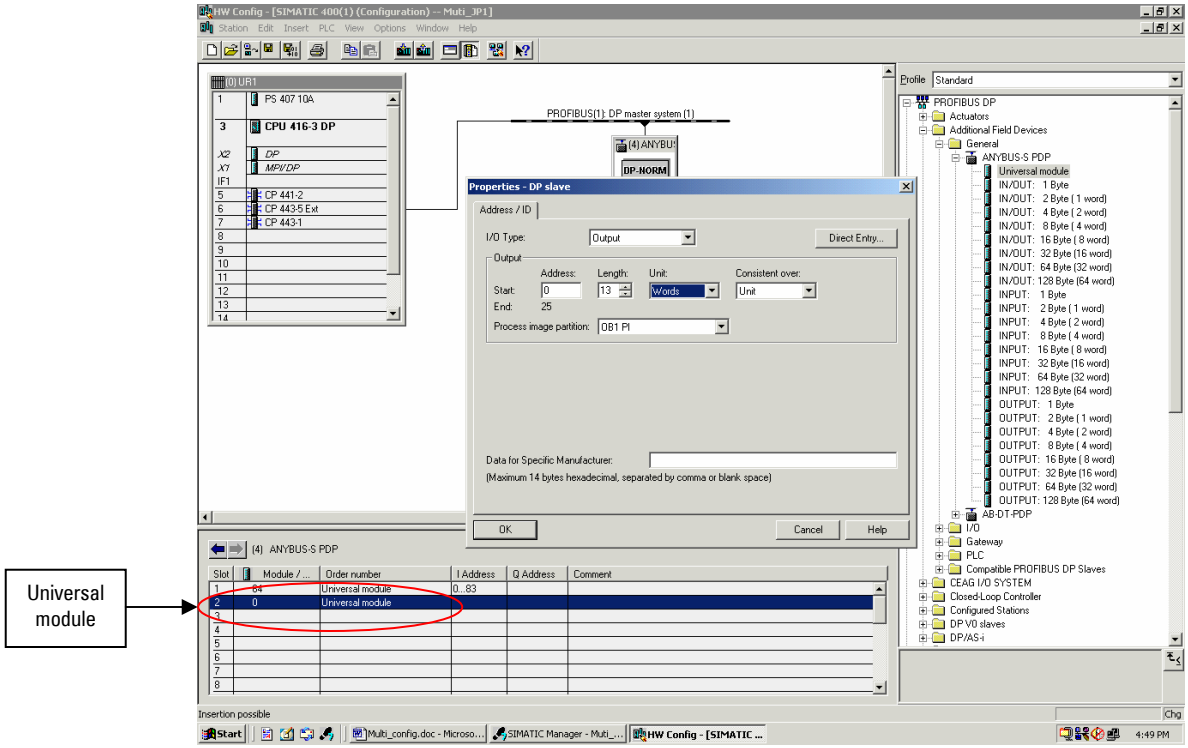
2. Double-click the *Universal module* in slot 1 to open the Properties dialog box.



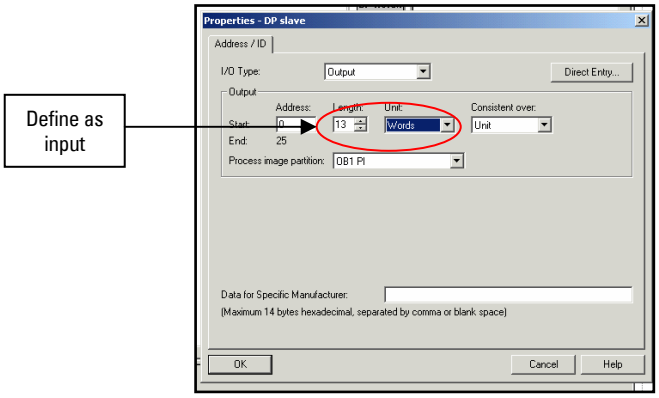
1. Define the Universal module as an input module with ***42 Words*** of data and click ***OK***.



2. Select another ***Universal module*** from the Hardware catalog and drag it to ***slot 2*** of the ***ANYBUS S PDP*** rack.
3. Double-click the ***Universal module*** in slot ***2*** to open the Properties dialog box.



4. Define the Universal module as an input module with ***13 Words*** of data and click ***OK***.

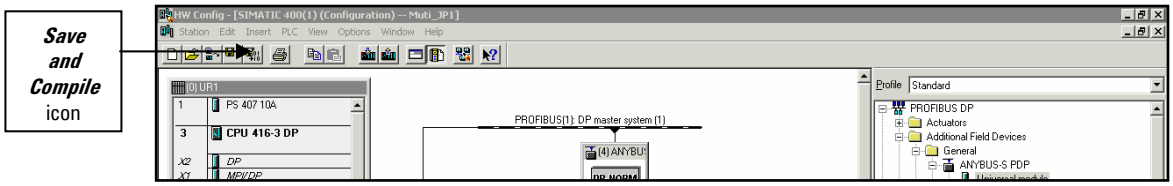


NOTES:

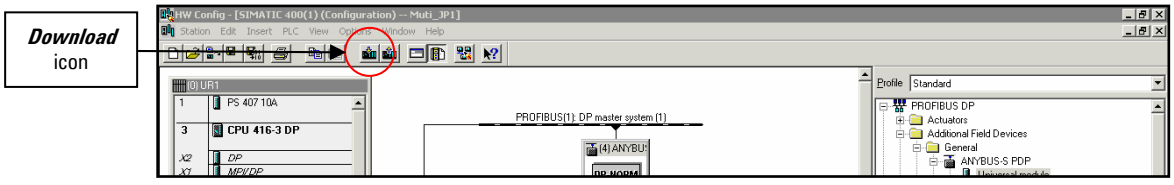
- The input and output addresses that the software selected for the card will be needed later. Please record.
- The input and output sizes vary from product to product (and software revision). Please refer to the SmartLinx PROFIBUS DP manual for the details on the correct product sizes to use.

Step 6 – Download the new configuration

1. Click the ***Save and Compile*** icon.



2. Click the ***Download*** icon to save the new configuration to the PLC. To do this you will have to place the PLC in stop mode.

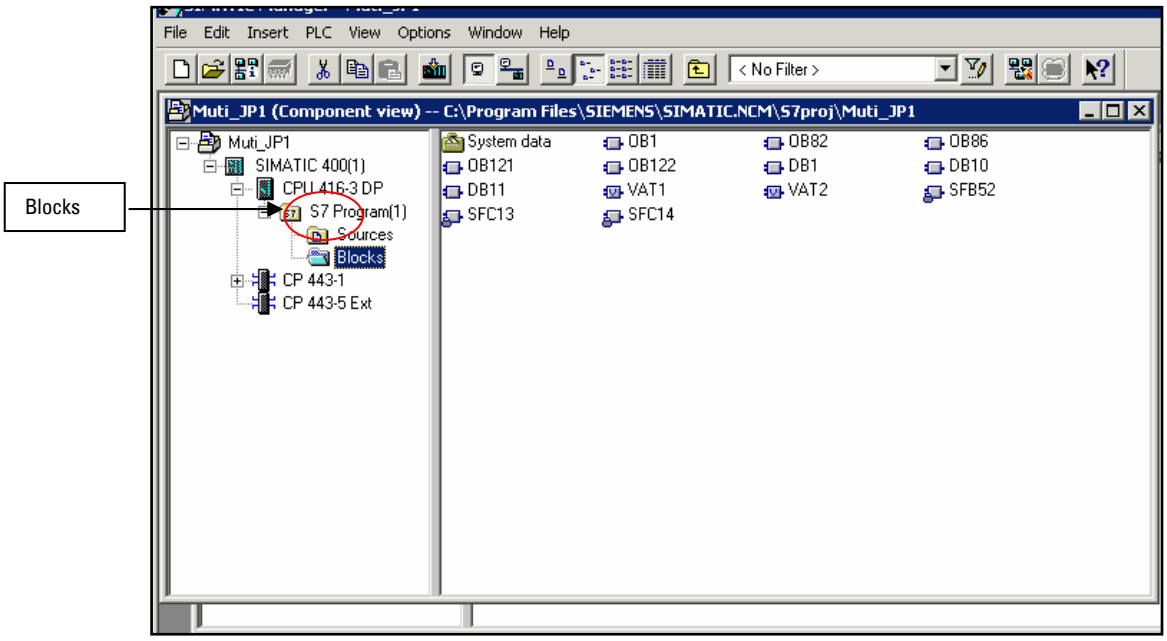


NOTE: After the download is complete, do not place the PLC in run mode.

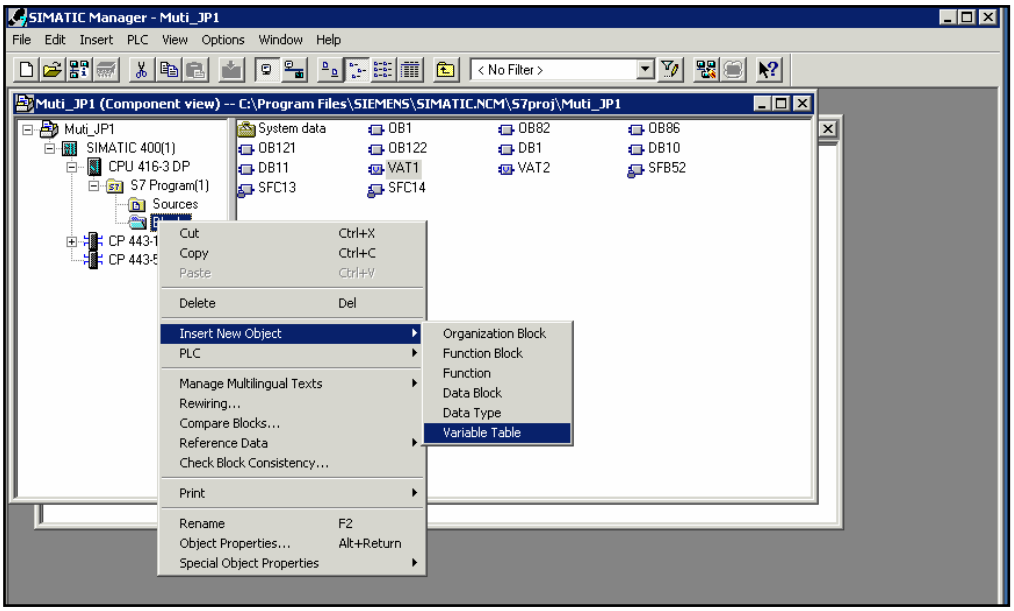
3. Connect the MultiRanger to the network and power the MultiRanger verifying that the network address is set correctly.
4. Place the PLC in ***RUN*** mode. The green light on the SmartLinx card will activate.

Step 7 – Setup a VAT table to view the data

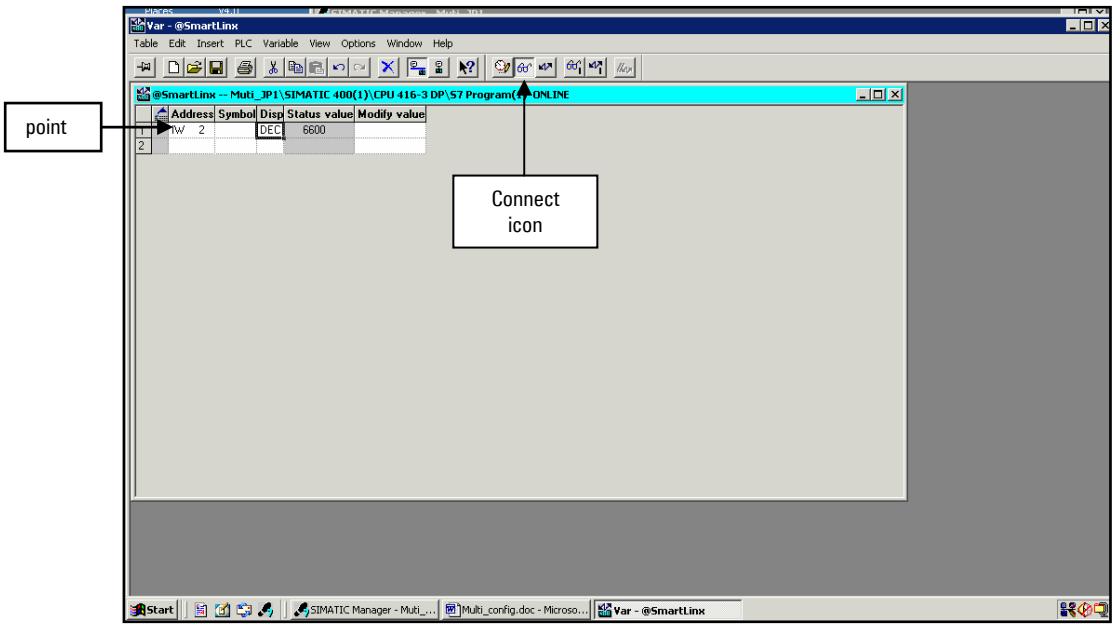
1. From SIMATIC Manager, navigate to the program section of the CPU (see below).



2. Right-click ***Blocks*** and select ***Insert New Object / Variable Table***.



3. Call the new table ***SmartLinx*** and add the point ***IW002*** as a Word and an Integer (see below).



4. Click the ***Glasses*** icon to connect to the PLC and view the data coming in.
5. Go to ***PROGRAM*** to place the MultiRanger into simulation mode.
6. Pressing *ENTER* while you are viewing ***P920 index 1*** updates the values on the VAT table.

NOTE: The data block information varies from product to product, please refer to the SmartLinx PROFIBUS DP manual for details on the addresses required for the SmartLinx ready product.