TECHNICAL NOTE TNDA04

Configuring the PAXCDC50 with Siemens Simatic Manager

Product(s) Used: PAXI, PAXCDC50, Simatic Manager Software

This Technical Note is intended to be used along with the Red Lion Product Bulletin PAXCDC50-A, which covers the operation of the PAXCDC50 – Profibus-DP Communications Option Card. Both the Product Bulletin and this Technical Note assume the reader has an understanding of the operation of the PAXI unit as well as Profibus.

INSTALLING THE GSD FILE

Before you can begin commissioning your Profibus network in Simatic Manager, you must install the GSD file for the PAXCDC Profibus-DP Communications Option Card. This file can be found on the Red Lion Controls web site. http://www.redlion.net/

From the main page, click on Support. Once in the Tech Support page, choose Downloads from the list on the left side of the screen, and click Profibus GSD Files. By clicking the download link, downloading will begin.

To install the GSD file in Simatic Manager, Select the menu command Options >Install New *.GSD Files. In the dialog box that appears open the drive/directory which contains the PAXCDC50 Profibus-DP card GSD file.

Results – The PAXCDC Profibus-DP card will be entered in the "Hardware Catalog" under PROFIBUS-DP/Other Field Devices and will be available for use in configuring.
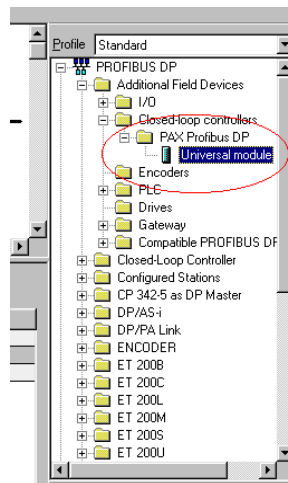

Figure 1

CONFIGURATION

Configuration refers to both hardware configuration and data structure configuration. The DP Master must know what type of hardware it is controlling and what type of data it can expect to exchange with the DP Slave.

Once the PAX meter has been added to the network, it is time to configure. Figure 2 shows an example of DP network set up in Simatic Manager. The PAXCDC50 has been selected from the Hardware catalog and installed on the network (Refer to Seimens Simatic Manager documentation on installing hardware). When the PAX Profibus DP Module has been selected, a choice of PAX Digital or PAX Analog must be made. Data block sizes will vary depending on which PAX has been chosen (Refer to page 3 of the RLC Product Bulletin PAXCDC5 for details on the data blocks)

For the example shown in figure 2, a PAX Digital was chosen and installed. The PAX Digital produces 84 bytes of Input data and consumes 84 bytes of Output data. (Refer to page 3 of the RLC Product Bulletin PAXCDC5 for details on the data blocks). These 84 bytes of data are broken up into data blocks. These data blocks are referred to as slots in Simatic Manager. Each slot represents a block of data to be written to the PAX, or read from the PAX by the DP Master. The maximum data size of each slot is 32 bytes. Multiple slots can be used to account for all the data produced and consumed by the PAX. It is possible to configure these slots to handle less than the total data size of the PAXCDC50, however, you may not set these slots up to handle more data than the total data size. The window at the bottom of Figure 2 shows these slots configured to handle all 84 bytes of input and output data.
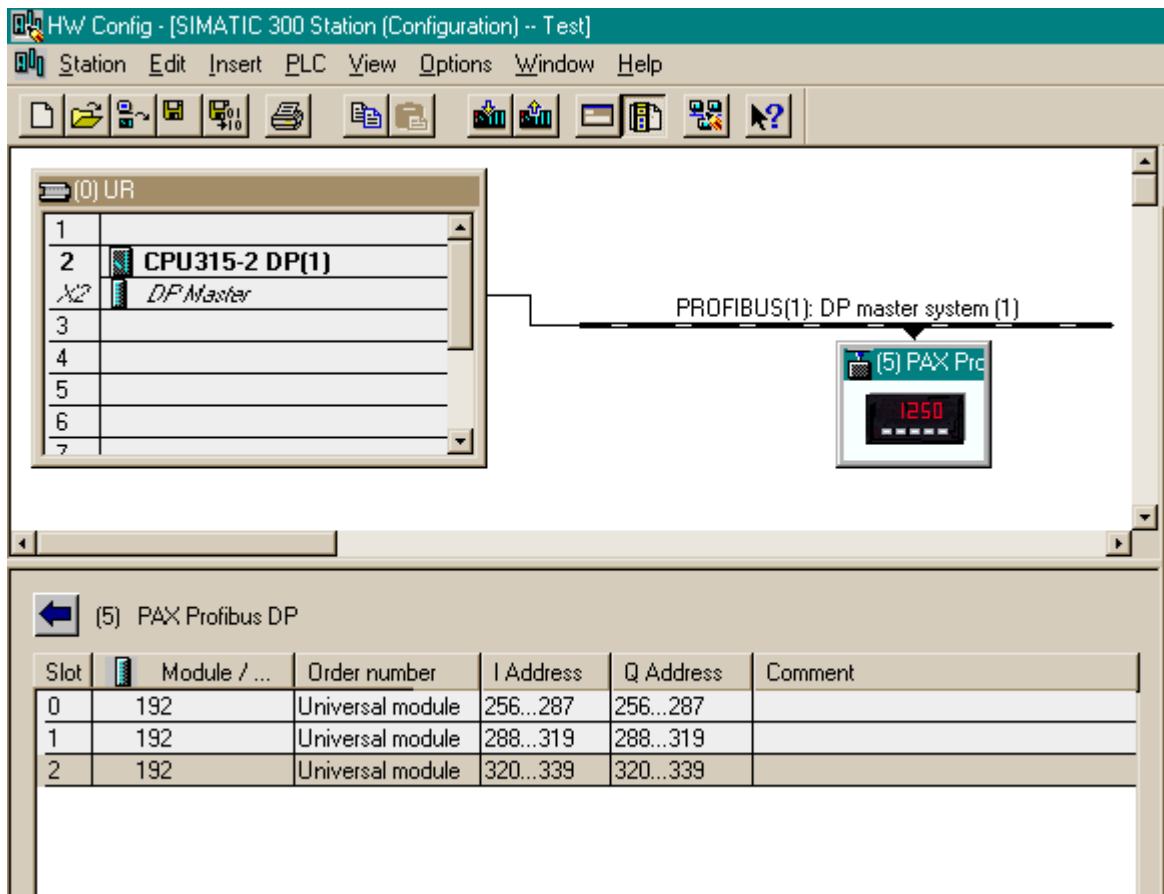

Figure 2

To configure the properties of each slot, double click the slot number you wish to edit. Figure 3 shows the slot properties for slot 0 in our example.
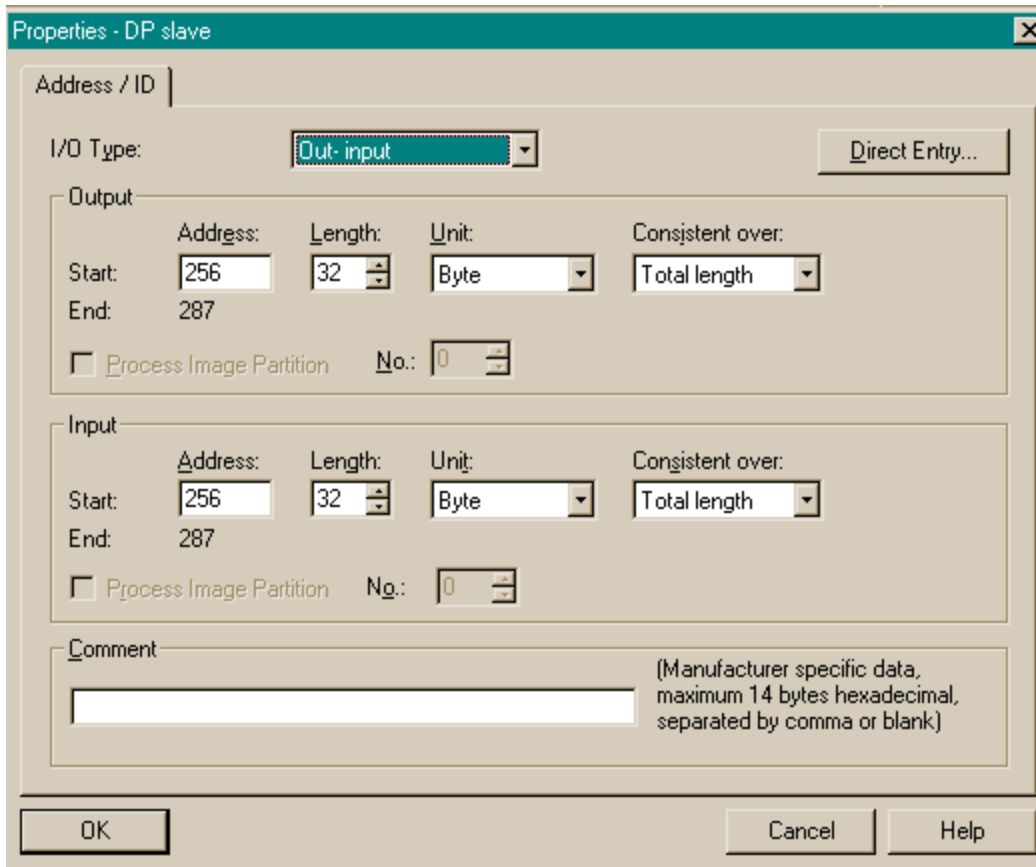
Figure 3

I/O Type – Select in the "I/O type" field whether the DP Slave is a module with inputs, outputs, or both inputs and outputs.

Start Address – Enter the address in the Siemens processor data image table to which you would like to assign the data for this slot. See the Siemens processor documentation for more information on the data image table.

Length – Enter the total length of the data block.

Notice in Figure 2 that the Input and Output addresses are identical. The processor has separate data image tables for both input data and output data. In Figure 2, you will notice the entire 84 bytes of input and 84 bytes of output data are accounted for in the slot configuration (slot 0 length = 32 bytes, slot 1 length = 32 bytes, and slot 2 length = 20 bytes). However, if only registers 0-3 are needed to be used by the processor, slot 0 can be configured with a length of only 24 bytes (4 bytes/register). Slots 1 and 2 can be left empty. In another case, if registers 0 – 6 are needed by the processor, slot 0 would be configured with a length of 32 bytes, slot 1 would be configured with a length of 4 bytes, and slot 2 would be empty.

PARAMETERIZATION

The PAXCDC50 uses the Profibus User Parameter Data Block to configure the Polled Read Mask (See page 3 of the RLC Product bulletin PAXCDC50 for more details on the Polled Read Mask).

To configure the Polled Read Mask, double-click the PAX DP slave module in Simatic Manager to access the DP Slave Properties and select the Hexadecimal Parameter Assignment Tab. The Parameter Assignment Data is the Profibus User Parameter Data Block RLC uses to configure the Polled Read Mask.

Figure 4 shows and example of how the PAXCDC50 interprets the hexadecimal values placed in the Parameter Assignment Data. The hexadecimal data entered in Figure 3 are as follows: 00,00,07,FF,FF. In this case, all 18 registers would be updated in the Input Block.
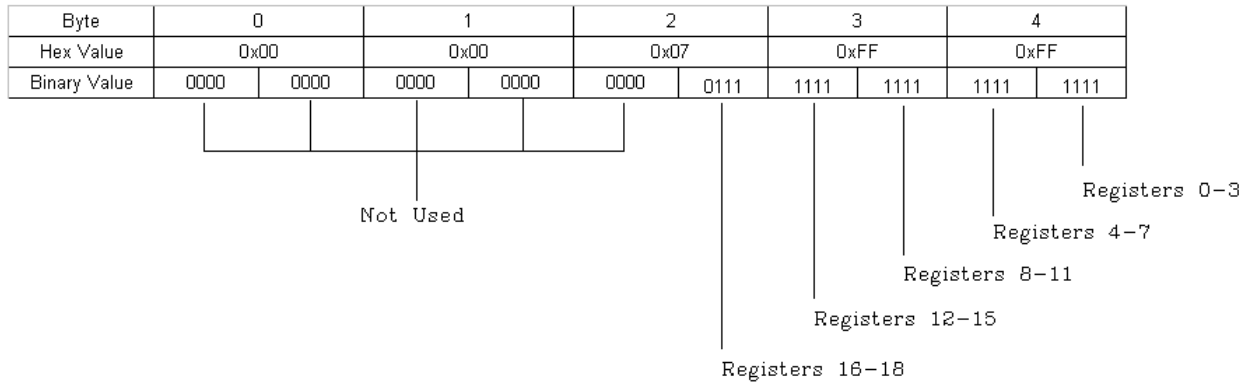
Byte	0		1		2		3		4	
Hex Value	0x00		0x00		0x07		0xFF		0xFF	
Binary Value	0000	0000	0000	0000	0000	0111	1111	1111	1111	1111

Not Used

Registers 0-3

Registers 4-7

Registers 8-11

Registers 12-15

Registers 16-18

Figure 4