APPLICATION NOTE:

Establishing I/O communication between AnyBus-S DeviceNet using RsNetWorx for DeviceNet

HMS INDUSTRIAL NETWORKS

Revision Notes

Date:	Revision:	Notes:
2002-04-16	0.10	Document created
2003-08-04	0.20	Updated layout
2003-08-16	1.00	Updated text

Abbreviations

ABS	AnyBus-S DeviceNet
PLC	ControlLogix5000

1. System configuration overview

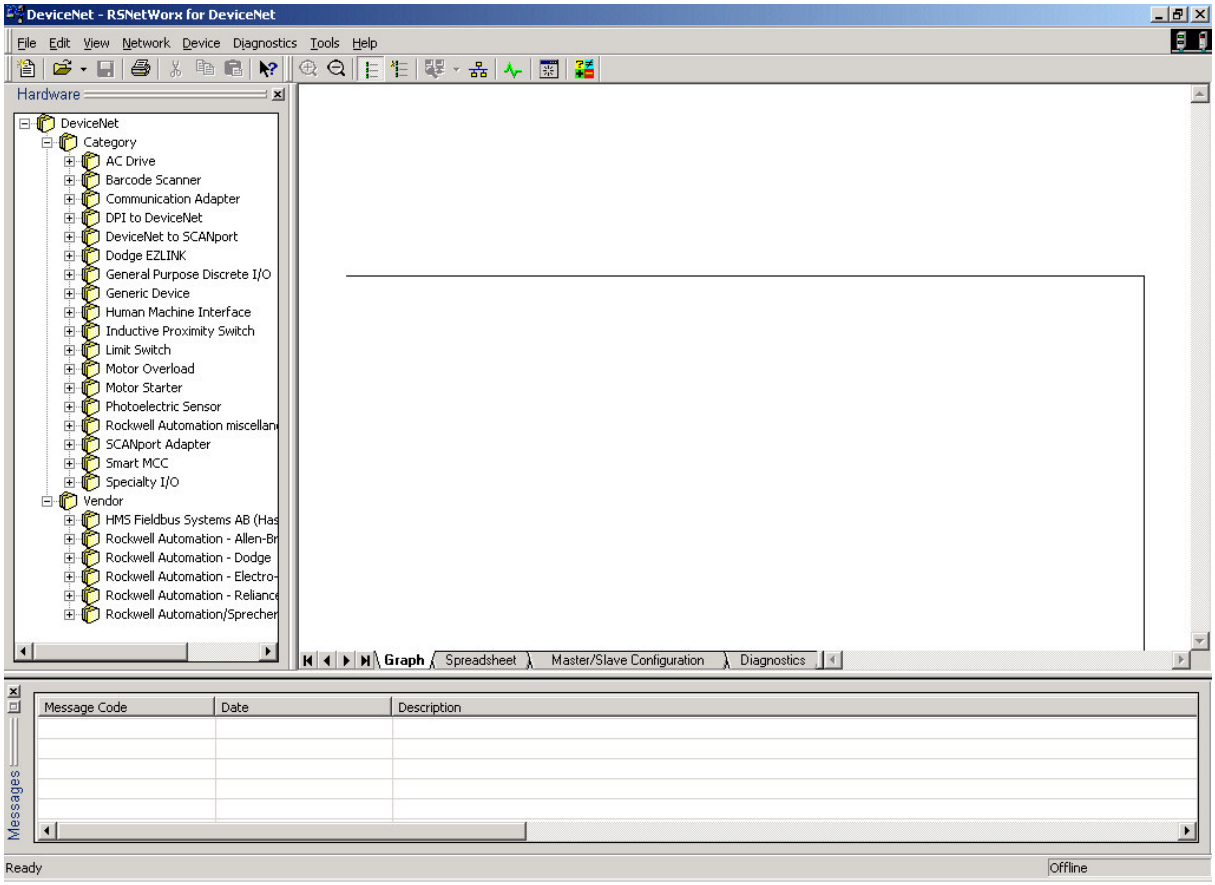
This is an example on how to configure the ABS module to connect with ControlLogix5000. It should however be possible to use this document as a guide on how to set up any “generic” DeviceNet module, for example the AnyBus-Communicator, under RsNetWorx.

This application note assumes that RSLogix5000, RsNetworx for DeviceNet and ControlLogix5000 with a DeviceNet module are set up and working correct.

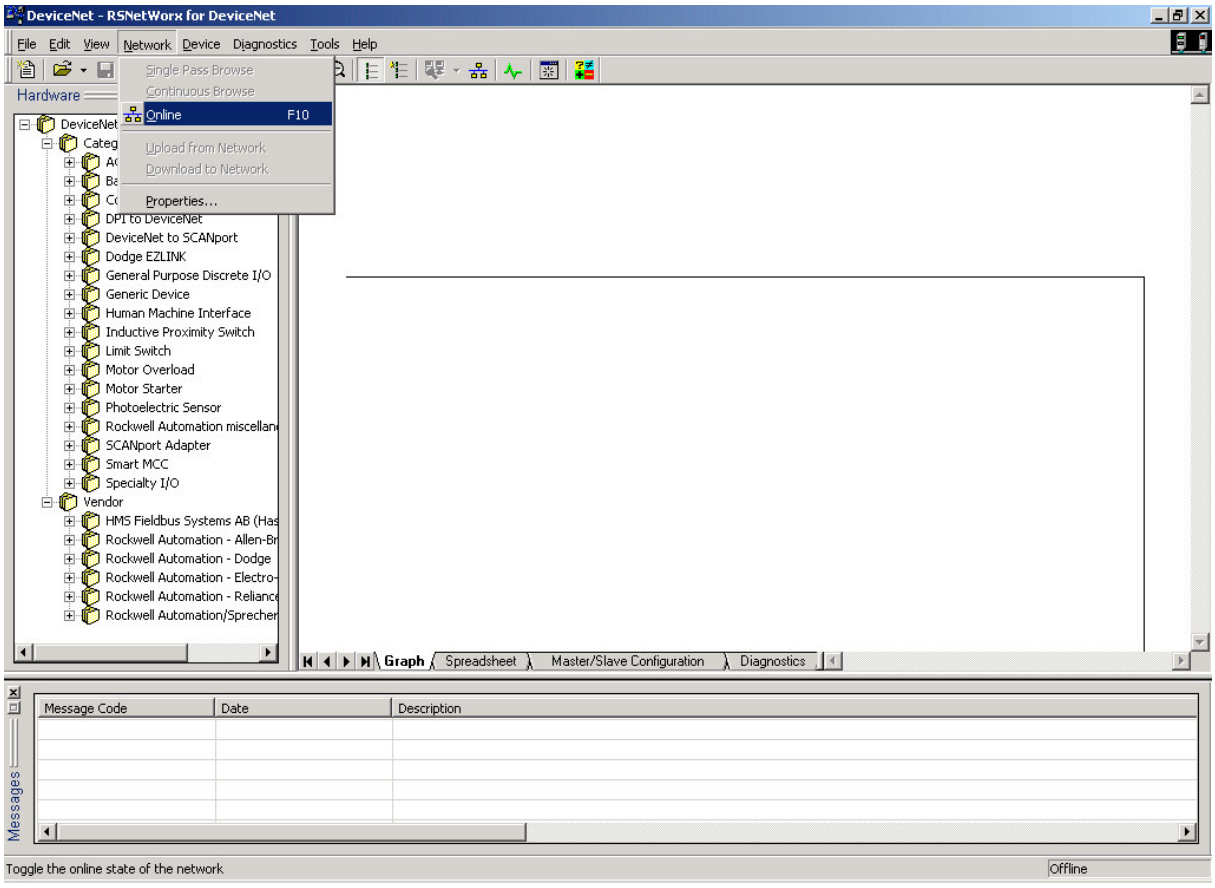
The PLC is set up to read 4 bytes data + write 4 bytes of I/O data to/from the ABS.

2. Configure the IO connection using RsNetWorx for DeviceNet

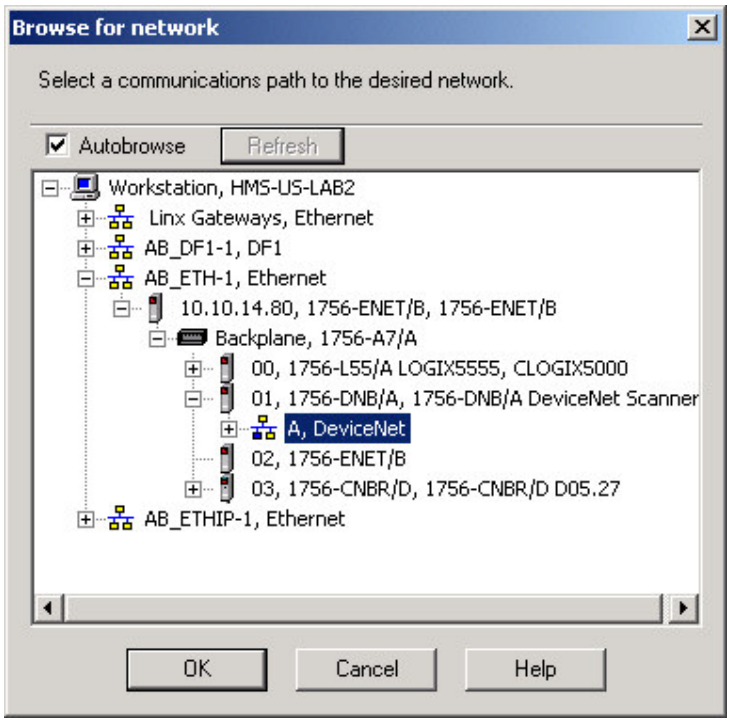
Start RSNetworx.



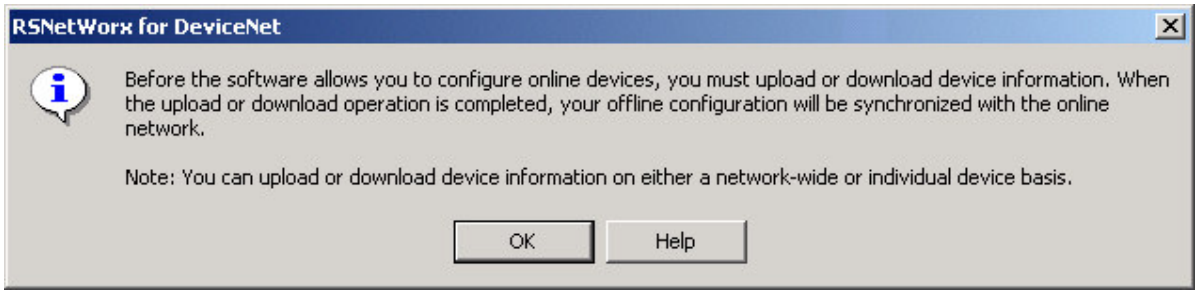
Select Online from the Network menu.



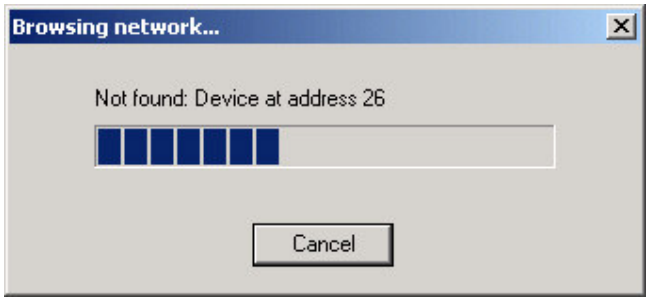
Verify that the Online connection for RSNetworx has been properly configured.



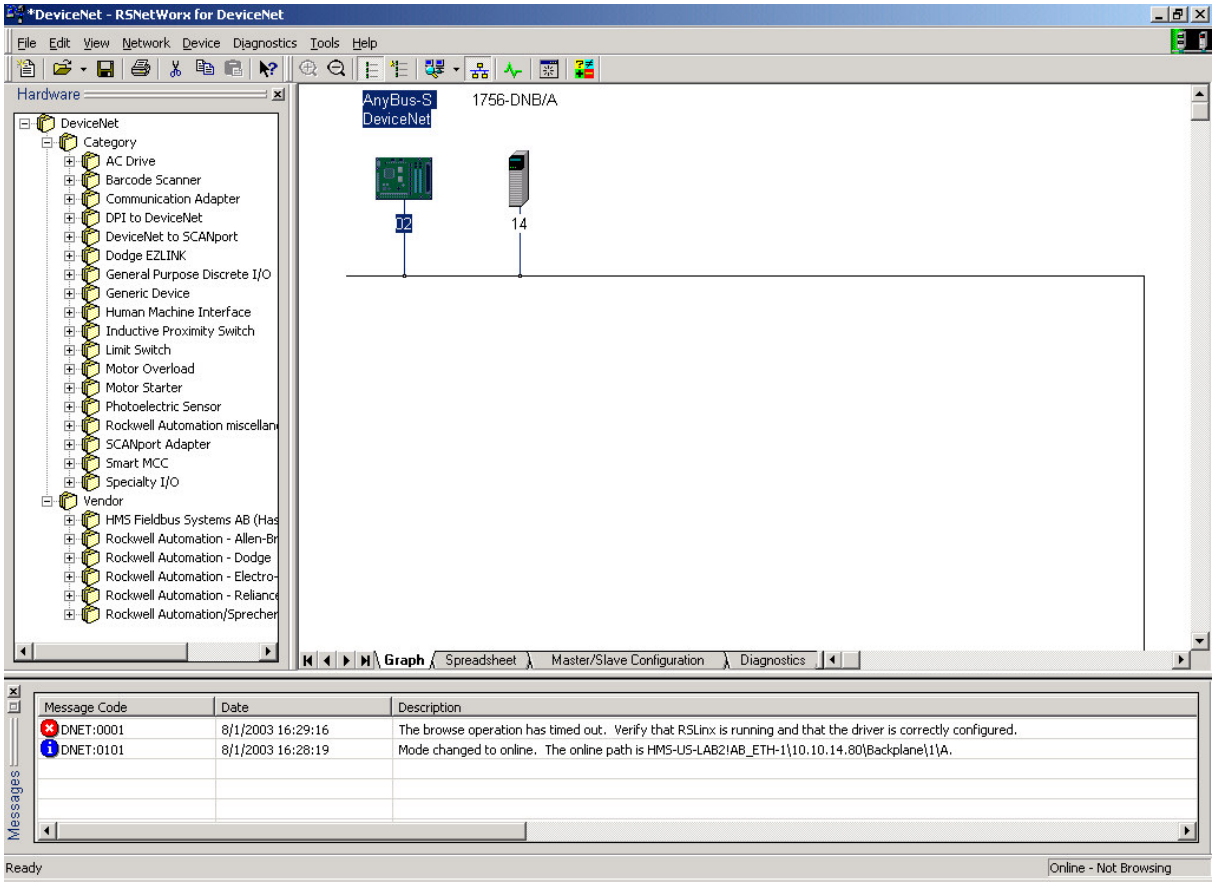
RsNetWorx will now show this message, just hit the OK button.



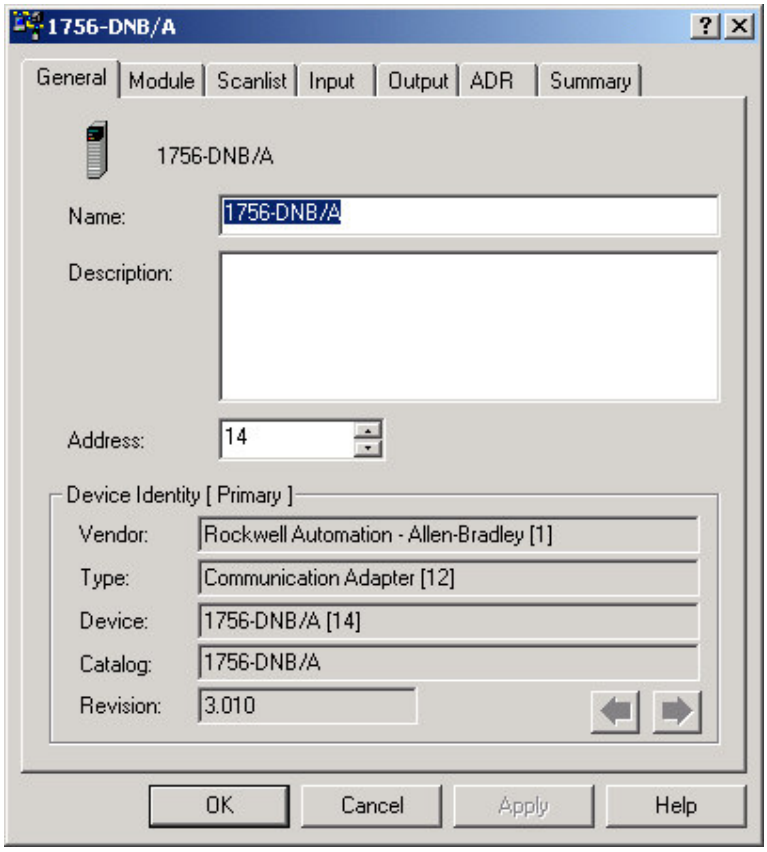
When RsNetWorx goes online, it will automatically scan the network for DeviceNet nodes.



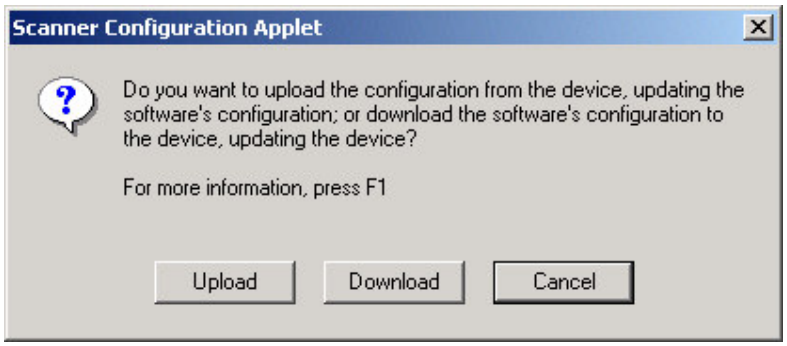
When the browse is finished, the network will have found the ABS module for DeviceNet. If the ABS module is identified as generic or unknown, verify that the EDS file has been installed. That is done with the EDS Wizard in the Tools menu.



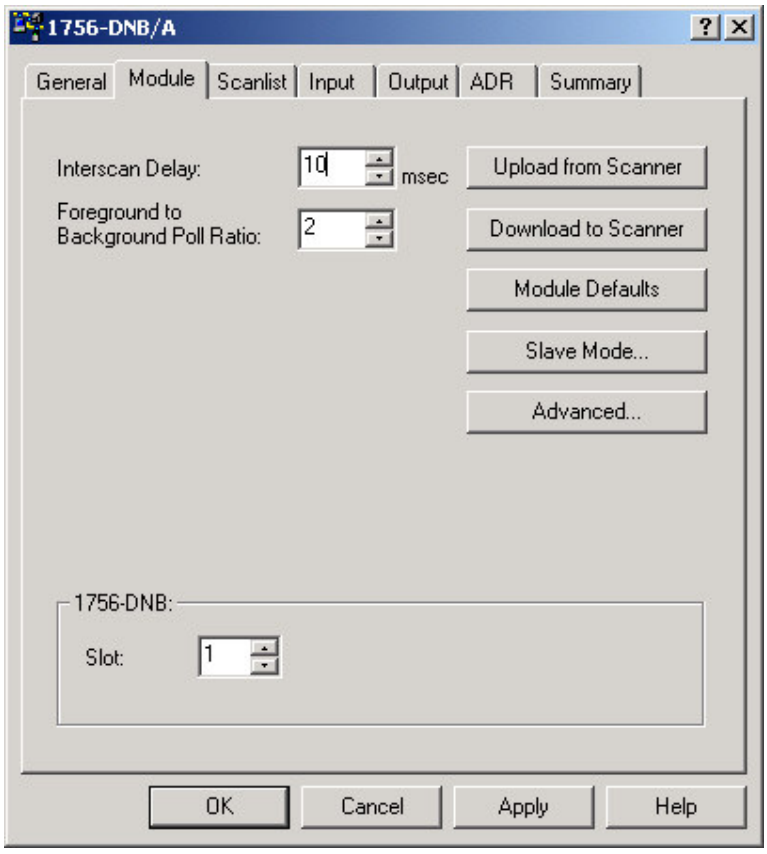
Now we shall add the ABS module to the DeviceNet scanner. Our DeviceNet scanner is the 1756-DNB/A module. To add the node to the scanners Scanlist, double-click the scanner. Now the window shown below shall appear.



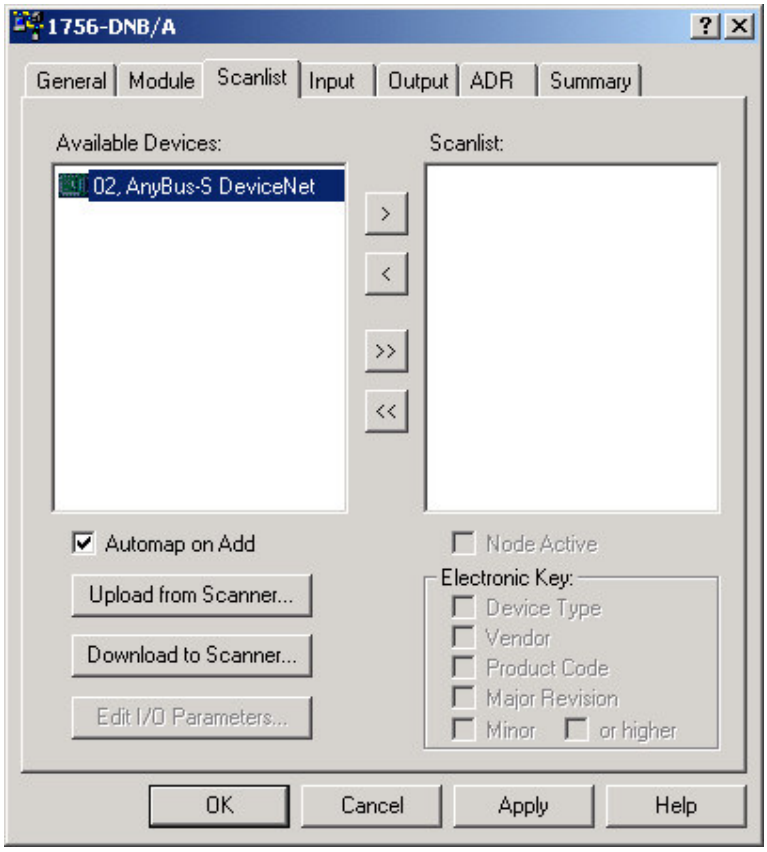
Select the Module tab at the top of the window. Since RsNetWorx have not verified its data with the scanner yet, we will be asked whether to upload or download a configuration. If we already have a configuration in the scanner, we can retrieve that by selecting upload, but if we do not have a configuration in the scanner, we can select either upload or download.



When the configuration has been uploaded or downloaded, the configuration will appear under the module tab. The Interscan Delay is the time the scanner shall wait between each scan cycle. A module can also be configured to be either background or foreground. In this example, we will use the default values.

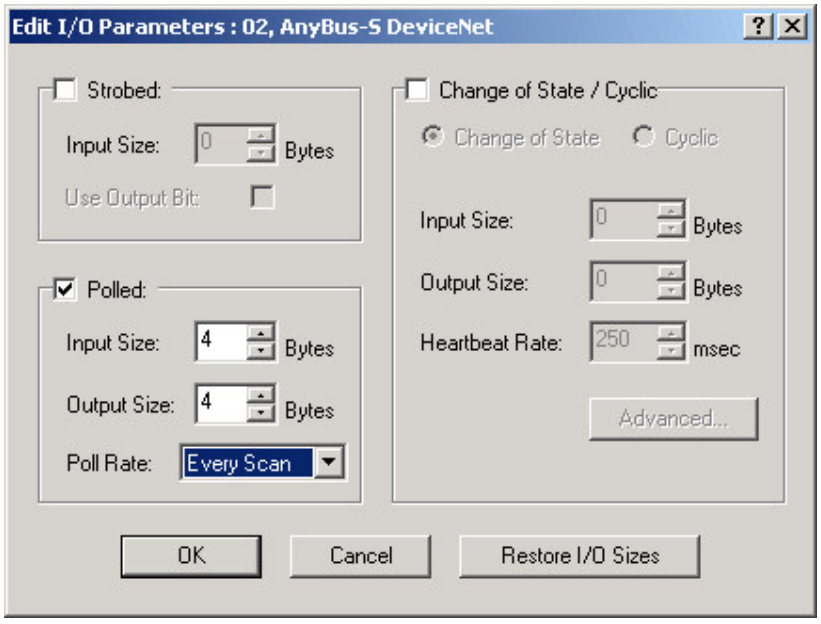


Now press the Scanlist tab. This will show the slave modules available, as well as any nodes that were in the Scanlist earlier.

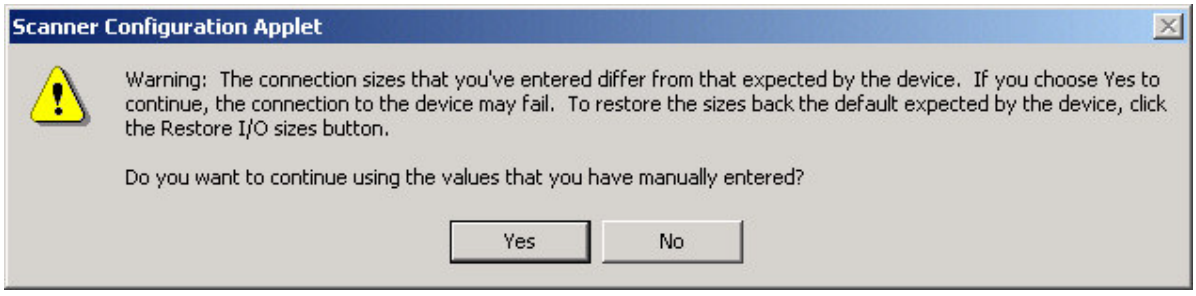


Select the ABS module, and press the “>”-button to add the ABS to the Scanlist of the scanner. RSNetWorx will now show a warning prompt saying that the module does not have any I/O data set by default. To set the correct data sizes, press the “Edit I/O Parameters” button, which shall be enabled after the module has been added to the Scanlist. Note that the ABS has to be selected in the Scanlist to be able to do this.

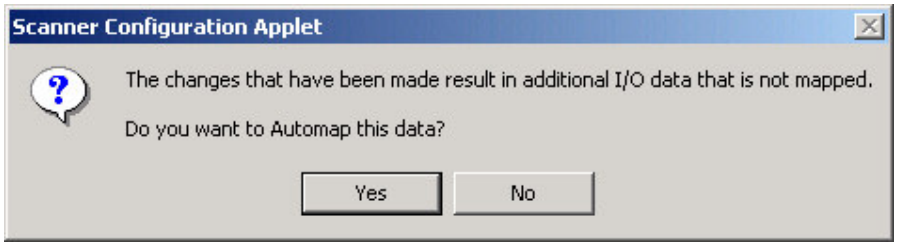
The data configured in the AnyBus module is automatically mapped to the Polled I/O connection on DeviceNet. Set the polled I/O connection data sizes to the same data sizes that the ABS module is configured for. In our case we have 4 bytes input and 4 bytes output.



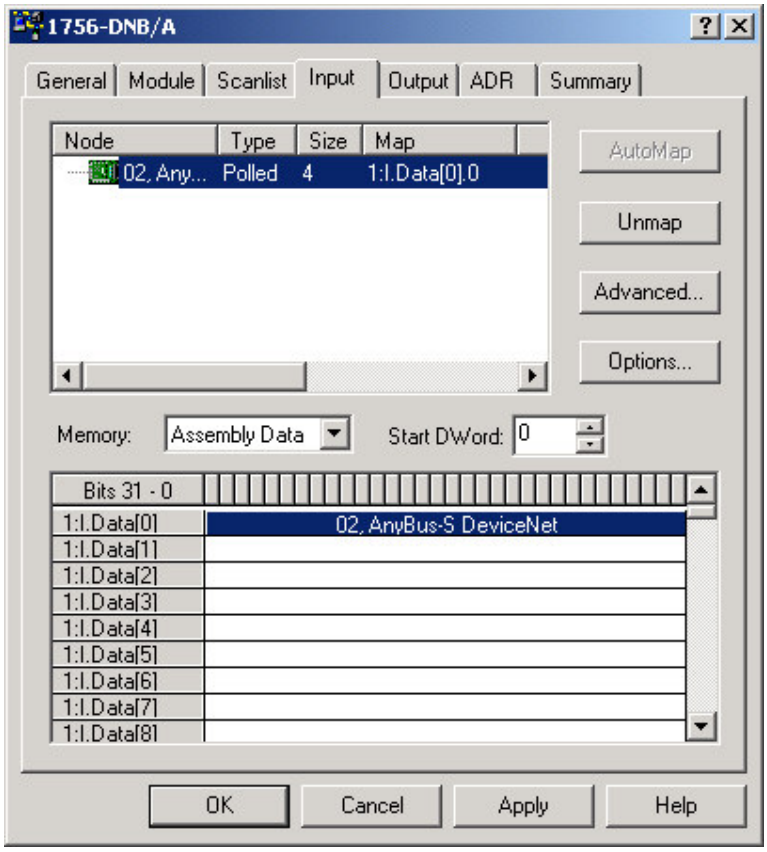
When we press OK, RsNetWorx will show this message telling us that the I/O sizes don't match the default I/O sizes, the reason for this is the missing I/O data messaged that we did get earlier.

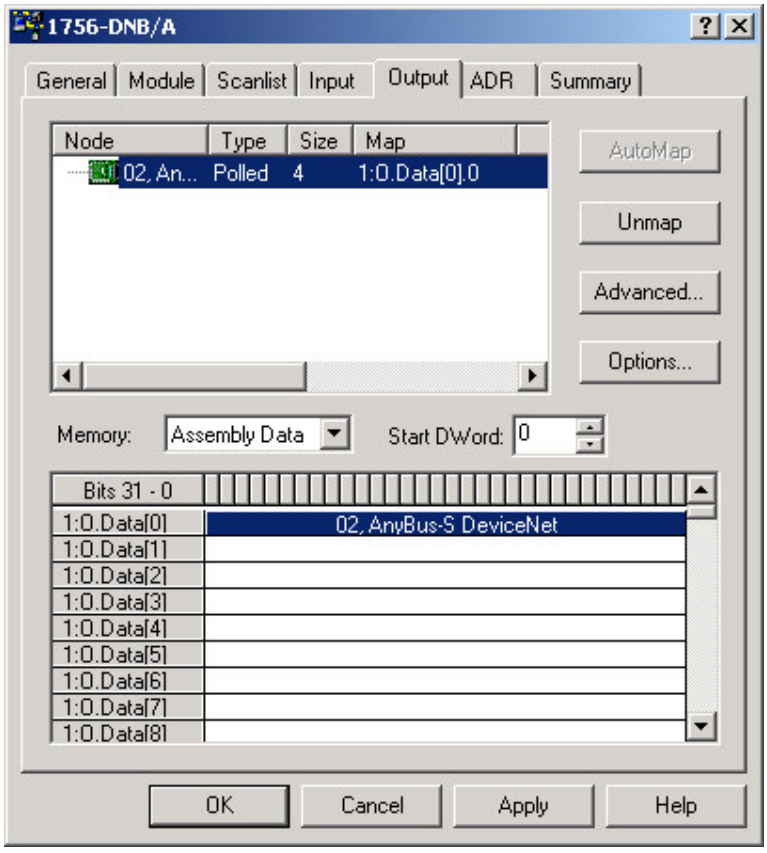


RsNetWorx will ask us if we want to auto map the data to first available memory location in the DeviceNet scanners memory.

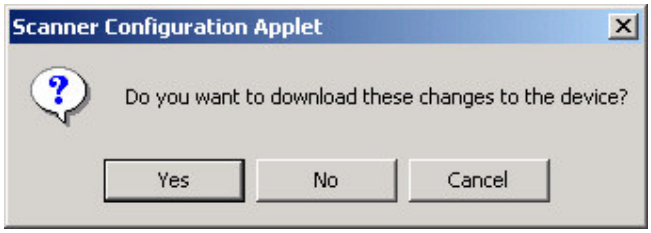


If we select the Input and Output tabs at the scanner configuration, we can now see how the data has been mapped to the DeviceNet scanners memory.

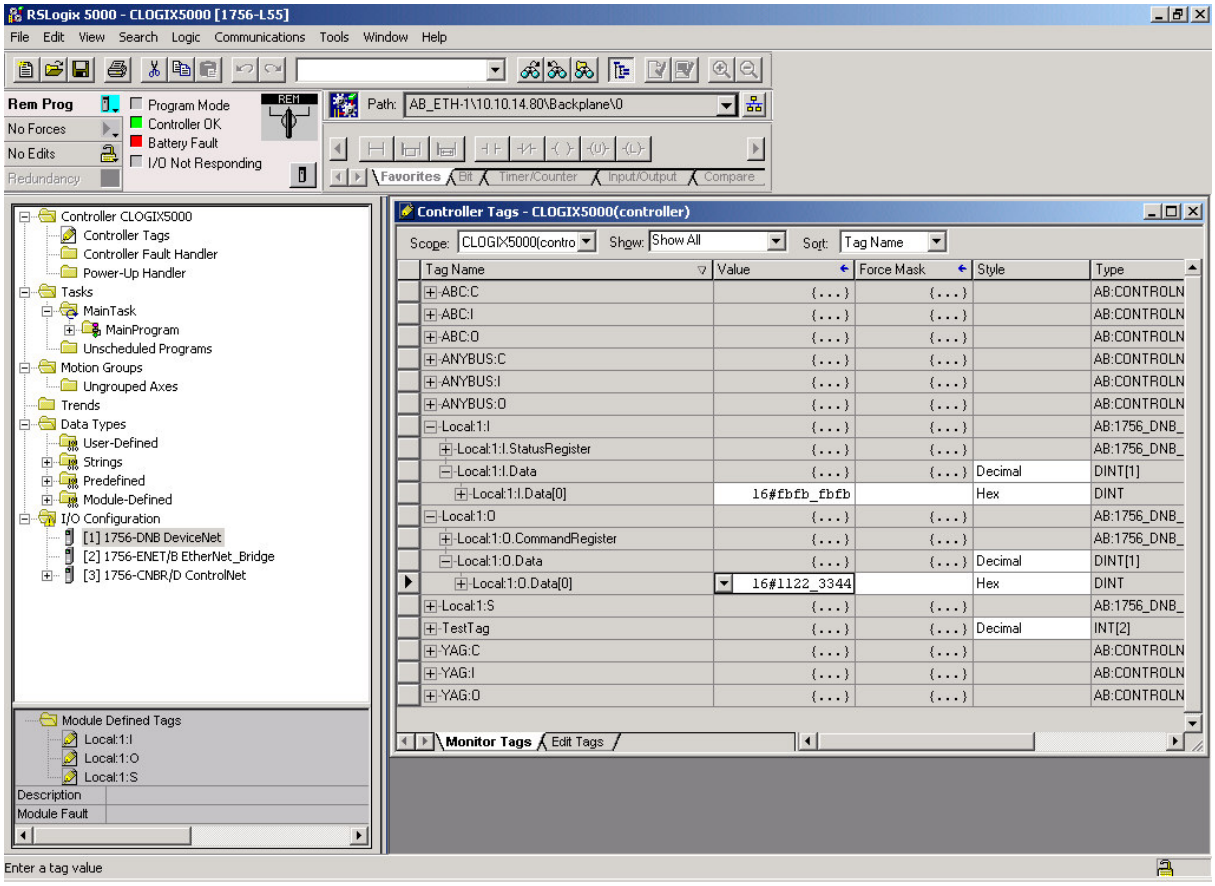




If we accept this configuration by clicking on OK or Apply, RsNetWorx will ask us if we want to download this configuration. Select Yes to download the configuration. Make sure the PLC is in programming mode when this is done, since it will not accept a new configuration in Run mode.



Now the scanner shall be correctly configured. Start RsLogix5000 and go online, under controller tags it's now possible to access the data that we did configure.



3. Links to information about networks and products

- The latest for the ABS module can be found on the HMS homepage http://www.hms-networks.com/downloads/absdownloads.shtml.
- The Open DeviceNet Vendor Organization has a homepage, http://www.odva.org/, with more information DeviceNet.
- For information concerning the PLC and DeviceNet scanner refer to the Allen-Bradley's homepage http://www.ab.com/catalogs/b113/controllogix/overview.html.

4. Support

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