



## **ControlLogix DeviceNet Interface Module**

Catalog Number 1756-DNB

### **Use These Release Notes**

These release notes describe changes in firmware revision 5.002 and earlier of the ControlLogix DeviceNet Interface Module, catalog number 1756-DNB, Series A.

Use these notes along with your ControlLogix DeviceNet Interface Module User Manual, publication 1756-6.5.19, May 2000.

Within this document, we refer to the 1756-DNB interface module simply as the module.

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### **New Features**

This section describes new features added to recent firmware revisions.

#### **New to Revision 5.002**

##### *DeviceNet AutoScan*

By using AutoScan, you can easily create a scan list without having to use RSNetWorx for DeviceNet. Starting with major revision 4 of the 1756-DNB DeviceNet scanner, you could initiate an AutoScan of a DeviceNet network programmatically in your application.

With RSLogix 5000 v13 and major revision 5 of the 1756-DNB DeviceNet scanner, you can initiate an AutoScan operation from the scanner properties dialog box in RSLogix 5000. When initiating an AutoScan operation, the DeviceNet scanner scans the network and acquires all devices whose transmit and receive sizes fit into the predefined memory allocated for each device. Each device is assigned a configurable number of bytes for the I/O data in the scanner memory.

To initiate an AutoScan operation, access the tab called ‘Scan List’ that is available on the DeviceNet scanner properties dialog box in RSLogix 5000. This functionality is well suited for networks that include simple devices having similar I/O sizes.

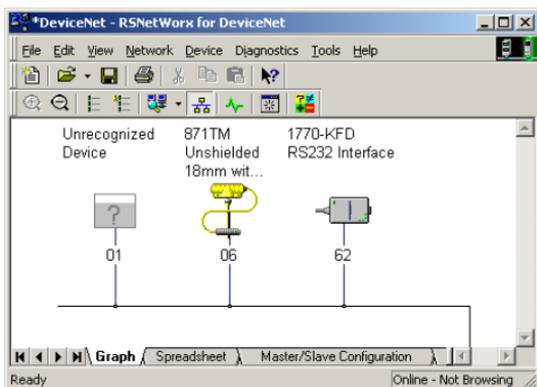
##### *Embedded EDS Support*

Prior to the release of RSNetWorx version 5, you had to manually install Electronic Data Sheet (EDS) files for new modules and for new firmware revisions of existing modules. If you did not install the new EDS file, RSLink and RSNetWorx would not recognize the device whose EDS was not installed.

The 1756-DNB v5.002 module now includes the current EDS file as part of the firmware. You can use RSNetWorx 5 or later to upload and register the EDS file right from the module without having to locate a file on a CD or a web site.

**EXAMPLE**

While browsing the DeviceNet network in RSNetWorx v5, Node #1 shows up as an Unrecognized Device. You know that Node #1 is in fact a 1756-DNB version 5, but you have not yet downloaded and installed the updated EDS file for it.

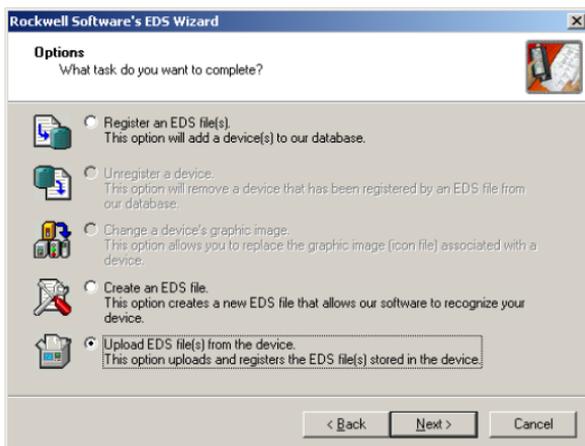


For devices that support embedded EDS files, follow these steps to obtain and install the appropriate EDS file.

1. Right-click on the unrecognized device and choose 'Register Device'.
2. Click on 'Next'.

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You see the following dialog box:



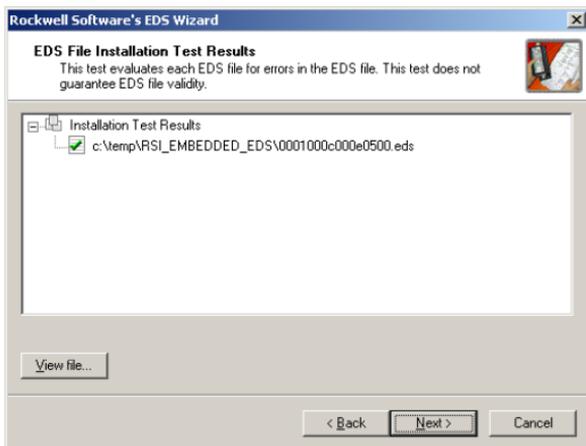
3. Choose the 'Upload EDS file(s) from the device' option.
4. Click on 'Next'.

RSNetWorx uploads the EDS file from the device and, when the upload is completed, you see a similar dialog box:



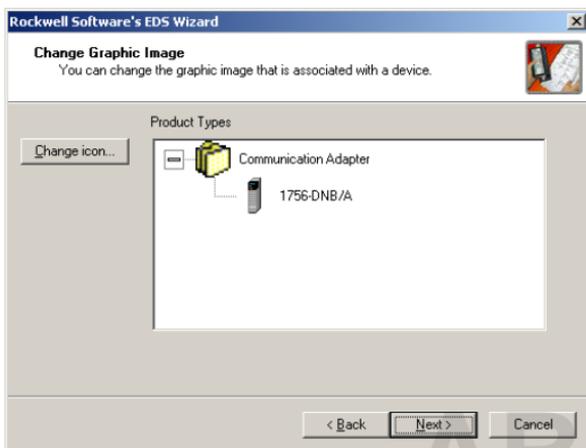
5. Click on 'Next'.

You see the status of the EDS installation:



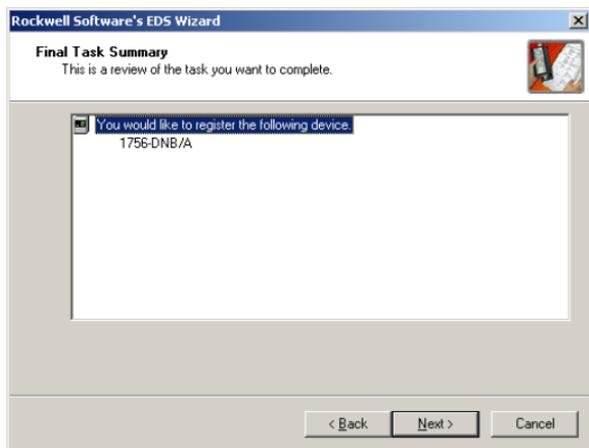
6. Click on 'Next'.

You see the following informational dialog box:



7. Click on 'Next'.

You see the following informational dialog box:



8. Click on 'Next', and then 'Finish'.

The new EDS file is now ready to use.

### New to Revision 4.001

- The use of this release of the module requires you to add a new electronic data sheet (EDS) file to RSLinx and RSNetWorx for DeviceNet to allow this 1756-DNB version to be recognized by the software. You can download the new EDS file from the following URL: <http://www.ab.com/networks/eds/>.
- AutoConfig feature - a scanner can automatically map a network of slave devices into its scanlist without the use of RSNetWorx for DeviceNet. For more information on how to use this feature, refer to the Technical Support Knowledgebase at the following URL: <http://support.rockwellautomation.com/> or contact Technical Support at 440.646.5800.

- Quick Connect feature - a reconnected slave node on a DeviceNet network can quickly go into operation by shortening the time required to make the logical connection between it and the scanner. For more information on how to use this feature, refer to the Technical Support Knowledgebase at <http://support.rockwellautomation.com/> or contact Technical Support at 440.646.5800.
- The module now supports the ability to perform electronic keying down to the major and minor revision level of a slave device.

### New to Revision 3.007

- Offlink Connection support – RSLinx and RSNetWorx for DeviceNet can now configure the 1734-ADN POINT I/O bus from other CIP-based networks using this version of the 1756-DNB firmware. With this version of the firmware, you can use Ethernet or ControlNet to connect to the module and then ‘bridge’ through the 1756-DNB module and 1734-ADN bus to communicate on the POINT I/O bus. Without offlink connection support, you would have to physically connect to the local DeviceNet network that the 1734-ADN bus is on to configure modules on the POINT I/O bus.
- We removed the ‘Build Identification Number’ from the product name string of the module. This does not affect the functionality of the product.
- We modified the behavior of the module LEDs to be compliant with ODVA specification. See this table for the updated list:

	<b>MOD/NET LED</b>	<b>I/O LED</b>
Flashing Green	<ul style="list-style-type: none"> <li>• No scanlist present</li> <li>• No connections established or timed out</li> </ul>	Module in IDLE mode
Solid Green	<ul style="list-style-type: none"> <li>• Scanlist downloaded</li> <li>• At least one connection established, none timed out</li> </ul>	Module in RUN mode

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	<b>MOD/NET LED</b>	<b>I/O LED</b>
Flashing Red	<ul style="list-style-type: none"><li>• Minor recoverable fault (check Node Status Table)</li><li>• No network power</li></ul>	N/A
Solid Red	<ul style="list-style-type: none"><li>• Unrecoverable fault</li><li>• Bus Off error</li><li>• Duplicate MACID</li></ul>	<ul style="list-style-type: none"><li>• Unrecoverable fault</li><li>• Scanner halted</li></ul>
Off	<ul style="list-style-type: none"><li>• No device power</li><li>• Module not online</li></ul>	<ul style="list-style-type: none"><li>• No network power</li><li>• No device power</li><li>• Module not on</li></ul>

### **New to Revision 3.005**

A 'Build Identification Number' has been added to the display sequence of the module. This number will be displayed along with the firmware version of the module on boot up. The number will take the form of the letter 'Q' along with a numeric value. It is used for internal quality auditing purposes and does not in any way affect the functionality of the product.

## Corrected Anomalies

This section describes anomalies corrected in recent firmware revisions.

### Anomalies Corrected in Revision 4.005

The 1756-DNB firmware version 4.005 corrects anomalies found in previous versions of the product.

- If a configured slave node was configured as 'background poll' **and** was the lowest numbered node in the poll list, that slave node would not be polled. This condition would be detected as Error Code 72 on the module. This anomaly applies to versions 4.001 and 4.002.
- If you enabled AutoScan in the module and, at the same time, an RSLinx browse was active through the module, the module could stop responding to subsequent Explicit Messages originating from modules in the backplane. You would notice this situation while browsing the backplane of a ControlLogix chassis; the module would have a red 'X' through it, indicating that the module is not responding to Explicit Messages.

This anomaly does not affect the operation of I/O data and was present only in version 4.002 of the module.

- The module could potentially hard fault when module ownership was switched from one controller to a second controller. This ownership switching was performed by inhibiting the connection from controller #1 to the module, and immediately uninhibiting the connection from controller #2 to the same module. When this fault occurred, the module would red-light and scroll a message on its front panel as follows:

```
ASSY_SRV.C --- 512:4097,0,0,0
```

You must cycle power to the module to correct this condition.

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### Anomalies Corrected in Revision 4.002

The 1756-DNB firmware version 4.002 corrects an anomaly found only in version 4.001.

A timing window existed in version 4.001 when it was executing its startup code. If this anomaly occurred, an 'ERC 4:2,0,0,0' error was shown on the front display of the module while it was in the process of powering up.

### Anomalies Corrected in Revision 4.001

- If a group-2-only slave device dropped an explicit message, the module would no longer be seen in the backplane during an RSLinx or RSNetWorx browse.
- If an OPC/DDE client sent a bad explicit message, the module would no longer be seen in the backplane during an RSLinx or RSNetWorx browse.
- The module would send a bad explicit message if the explicit message size was greater than 250 bytes. This size can be configured on CIP-style message instructions in RSLogix 5000.

### Anomalies Corrected in Revision 3.010

If a slave device dropped an explicit message during the slave initialization process performed by the scanner, the module would fail with an ERC 4:6 error code.

### Anomalies Corrected in Revision 3.009

- If a module is powered up simultaneously with another DeviceNet device with the same node address, **both** nodes would go into 'Duplicate Node Detected' mode.
- If an explicit message was sent to the module through the backplane, commanding it to change its MAC address, the module would fault with an 'ERC Error: -- 4:2,0,0,0'.

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## Anomalies Corrected in Revision 3.008

- If you change a slave device's Transmit or Receive size in the scanner's scanlist without changing the slave's corresponding Transmit or Receive size, **and** the I/O connection between the scanner and the slave device is maintained during the process, the scanner will not indicate an I/O data size mismatch error (ERROR code 77) when put back into RUN mode.

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### IMPORTANT

The input data to the controller will **not** be updated during this condition.

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For example, you modify the scanner's scanlist by changing the slave device's Receive size without changing the slave's corresponding Transmit size, then place the scanner back into RUN mode. Inputs in the controller will not be updated and no error will be reported. Outputs will continue to be sent out.

- If the scanner module could not establish an I/O connection to a slave device due to configuration problems, further Explicit Messages to that device would not be sent by the scanner. When this occurs, the following conditions may take place:
  - The scanner module would 'disappear' from the backplane in an RSLinx browse window.
  - The slave device in question would not show up in an RSLinx browse window or missing in a subsequent browse.
  - The scanner module would not attempt to reestablish a connection to that slave device once the scanner got into this state (until the scanner is reset or the DeviceNet cable is disconnected and reconnected).

## Anomalies Corrected in Revision 3.007

The module would stop communicating to RSLinx or stop responding to ladder messages if you did not have the DeviceNet port connected and supplied with network power.

## Anomalies Corrected in Revision 3.005

- When the module input size was set for 20 DINTs **and** output size was set for 19 or fewer DINTs, the RUN/IDLE bit would be overwritten by random data causing the module to change mode unexpectedly. This anomaly applies to versions 3.003 and 3.004.
- This version corrected the ‘Watchdog Timer’ error that sometimes occurred during firmware upgrades. Once upgraded to version 3.005, flash upgrades will no longer require two steps.

*Please note that upgrades for previous versions of the module may still require two steps. See the README file in the upgrade kit for more information.*

- If a DeviceNet node was using fragmented I/O messages and did not finish its response before the module started another scan cycle, the output data from the controller was being mapped to the controller’s input data table.

## Known Anomalies

When Flash upgrading a module from versions prior to 3.005, it is possible that the module will require a two-flash operation. Please see the associated readme.txt (included with the Firmware upgrade kit) for more information on how to flash upgrade a module.

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