



# DeviceNet Communications

For PanelView Plus and PanelPlus CE Terminals

2711P

**User Manual** 

Rockwell Automation

# **Important User Information**

Solid state equipment has operational characteristics differing from those of electromechanical equipment. Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls (publication SGI-1.1 available from your local Rockwell Automation sales office or online at <a href="http://literature.rockwellautomation.com">http://literature.rockwellautomation.com</a>) describes some important differences between solid state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.

WARNING	Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.
IMPORTANT	Identifies information that is critical for successful application and understanding of the product.
ATTENTION	Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard, and recognize the consequence
SHOCK HAZARD	Labels may be on or inside the equipment, for example, a drive or motor, to alert people that dangerous voltage may be present.
BURN HAZARD	Labels may be on or inside the equipment, for example, a drive or motor, to alert people that surfaces may reach dangerous temperatures.

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Hardware and Software Requirements	To configure application install the appropriate of Plus or PanelView Plus correct software and fin computer.	ns for DeviceNet communication module of CE terminal. You must al rmware is installed on the	nications, you must n your PanelView so verify that the development
	Hardware and Software	PanelView Plus 700 to1500 PanelView Plus CE 700 to 1500	PanelView Plus 400/600
	RSView Studio	Version 4.0 or later	Version 4.0 or later
	<b>RSView Machine Edition</b>	Version 4.0 or later	Version 4.0 or later

Runtime

Hardware and Software	PanelView Plus 700 to1500 PanelView Plus CE 700 to 1500	PanelView Plus 400/600
RSNetWorx for DeviceNet	Version 6.0 or later	V6.0 or later
RSLogix 5000	15.0 or later	15.0 or later
Terminal Communication Module and Firmware	2711P-RN10H firmware version 3.16 or later	2711P-RN10C firmware version 3.16 or later

# **Additional Resources**

For more information on RSView Enterprise or RSView Studio programming software, refer to the online help.

You can download electronic versions of these publications from the Rockwell Automation website:

http://www.literature.rockwellautomation.com

Publication	Publication Number
PanelView Plus User Manual	2711P-UM001
RSView Machine Edition User Manual	ViewME-UM003
DeviceNet Selection Guide	DNET-SG001
DeviceNet Media Design Installation Guide	DNET-UM072
DeviceNet Tips & Tricks	DNET-BR003
Communication Module Installation Instructions	2711P-IN003

# **DeviceNet Overview**

Chapter Objectives	This chapter provides an overview of:
	• DeviceNet protocol
	Controller support
	• DeviceNet modules
	• DeviceNet module indicators
DeviceNet Protocol	The PanelView Plus or PanelView Plus CE terminals support DeviceNet I/O only. DeviceNet allows direct connection of devices. It also provides a control architecture that supports multiple processors. DeviceNet is a trunk/drop or bus-based network that supports up to 64 nodes and operates at 125, 250, or 500 Kbps.
Supported Controllers	A PanelView Plus or PanelView Plus CE terminal with a DeviceNet communication module can connect with other devices. Typical controllers supported include:
	• 1756-DNB module for the Control Logix network
	• 1771-SDN module for the PLC-5 network
	• 1747-SDN module for the SLC 5/03 to SLC 5/05 network
DeviceNet Module	There are two DeviceNet communication modules:
	• 2711P-RN10C for PanelView Plus 400 and 600 terminals
	• 2711P-RN10H for PanelView Plus and PanelView Plus CE 700 to 1500 terminals
	For details how to install the modules on the terminals, refer to the 2711P-IN003 installation instructions that ship with the module.
	ATTENTION The DeviceNet network is not supported on a personal computer running RSView Machine Edition software.



#### 2711P-RN10C DeviceNet Module for 400 and 600 Terminals

#### 2711P-RN10H DeviceNet Module for 700 to 1500 Terminals



Do not connect or disconnect any communication cable with power applied to this device or any device on the network. An electrical arc could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

# **Module Indicators**

The DeviceNet communication modules have three indicators: Network Status, I/O Status, Module Status.

## **DeviceNet I/O Status Indicator**

This bi-color (green/red) LED provides information on the states of inputs and outputs.

Condition	Status	Indication
Off	Outputs active	All outputs are active.
	Inputs active	All inputs are active.
Green	Outputs active	One or more outputs are active and under control, and no outputs are faulted.
	Inputs active	One or more inputs are active and producing data, and no inputs are faulted.
Flashing green <sup>(1)</sup>	Outputs idle	One or more outputs are idle, and no outputs are active or faulted.
Flashing red <sup>(1)</sup>	Outputs faulted	One or more outputs are faulted, and may be in the fault state.
	Inputs faulted	One or more inputs are faulted, and may be in the fault state.
Red	Outputs forced off	One or more outputs are forced off (may be an unrecoverable fault).
	Input unrecoverable fault	One or more inputs has an unrecoverable fault.

(1) The flash rate of the LED is approximately 1 flash per second. The LED should be on for approximately 0.5 seconds and off for approximately 0.5 seconds.

## **DeviceNet Module (MOD) Status Indicator**

This bi-color (green/red) LED provides device status. It indicates whether or not the device has power and is operating properly.

Condition	Status	Indication
Off	No power	No power applied to device.
Green	Device operational	Device is operating in a normal condition.
Flashing green <sup>(1)</sup>	Device in standby (device needs commissioning)	Device needs commissioning due to configuration missing, incomplete, or incorrect.
Flashing red <sup>(1)</sup>	Recoverable fault	For example, the device's scan list configuration does match the actual network configuration.
Red	Unrecoverable fault	Device has an unrecoverable fault. Cycle power to your computer. If the problem persists, the device may need to be replaced.
	Device self testing	Device is in self test. Refer to the DeviceNet Specification, Volume II, Identity Object.

(1) The flash rate of the LED is approximately 1 flash per second. The LED should be on for approximately 0.5 seconds and off for approximately 0.5 seconds.

### **DeviceNet Network (NET) Status Indicator**

This bi-color (green/red) LED indicates the status of the communication link.

Condition	Status	Indication
Off	Not powered	Device is not online.
	Not online	The device has not completed the Dup_MAC_ID test yet.
		The device may not be powered; look at the Module Status LED.
Flashing green <sup>(1)</sup>	Online	Device is online, but has no connections in the established state.
	Not connected	The device has passed the Dup_MAC_ID test, is online, but has no established connections to other nodes.
Green	Link okay, online, connected	The device is online and has connections in the established state.
Flashing red <sup>(1)</sup>	Connection timeout	One or more I/O connections are in the timed-out state.
Red	Critical link failure	Failed communication device. The device has detected an error that has rendered it incapable of communicating on the network (Duplicate MAC ID or Bus-off). Check network integrity and communication rate of all devices. Then cycle power to the card by shutting down and cycling power to your computer.

(1) The flash rate of the LED is approximately 1 flash per second. The LED should be on for approximately 0.5 seconds and off for approximately 0.5 seconds.



Extensive use of change-of-state connections, particularly with rapidly changing data, can adversely impact the available DeviceNet network bandwidth. If the network bandwith becomes consumed, some devices may only be able to communicate intermittently. This can result in timeout errors and possible loss of data. If timeouts occur, consider changing the connection type for some of the change-of-state connections to cyclic or polled.

# **Configure the Terminal as a Slave Device**

## **Chapter Objectives**

The procedures in this chapter will show you how to configure a PanelView Plus terminal to operate as a slave device on a DeviceNet network. A ControlLogix processor with a 1756-DNB DeviceNet module will scan inputs and outputs from the PanelView Plus terminals.

You will learn how to:

- configure communications for the PanelView Plus terminal and 1756-DNB module using RSLinx Enterprise software in RSView Studio software.
- create a DeviceNet configuration using RSNetWorx for DeviceNet software.
- add the DeviceNet module I/O configuration to the ControlLogix tag database using RSLogix 5000 software.

# Sample Network Configuration

The example configures DeviceNet I/O messaging for a numeric input and numeric output from a PanelView Plus terminal to a 1756-L63 ControlLogix processor, version 15.0.

- The PanelView Plus terminal has a network node address of 2.
- 1756-L63 ControlLogix processor, version 15.0, in slot 0 communicates via the 1756-DNB DeviceNet scanner module at network node address 1 in slot 2.



# **Configure Communications**

After creating your Machine Edition application, you are ready to configure communications using RSLinx Enterprise software.

- 1. Open RSView Studio software.
- **2.** In the Application Explorer dialog, double-click RSLinx Enterprise software to expand the tree.
- **3.** Double-click Communication Setup.
- 4. If prompted, select Create a New Configuration and click Finish.
- **5.** On the Local tab, right-click the 1789-A17 Backplane icon and select Add Device.

This is the virtual backplane of the PanelView Plus or PanelView Plus CE device.

🕫 🗍 Communication Setup - RNA://\$Local/De	viceNet/RSLinx Enterprise	
Add a device shortcut that specifies two communi development and testing. Click Target to specify a	cation paths. Click Local to specify one path on this computer for application second path for use by the target device.	
Device Shortcuts	Local Target	
	RSLinx Enterprise, USERNAME	
	Constraints of the second sec	
	Mode: Online Not Browsing	
	Offline Tag File	
	<u></u>	owse
Add Bemove Apply	Copy OK Cancel	<u>H</u> elp

- **6.** In the Add Device Selection dialog, select the communications card appropriate for your terminal size and click OK.
  - The correct card for the PanelView Plus 400 and 600 terminals is 2711P-RN10C.
  - The correct card for the PanelView Plus 700-1500 terminals is 2711P-RN10H.



**7.** Set the node address to 2, the communication rate to match the 1756-DNB DeviceNet module, and click OK.

The General tab of the DeviceNet Scanner Properties dialog specifies the name, node address, virtual backplane slot, and communication rate of the DeviceNet scanner. The virtual backplane of the PanelView Plus has two slots. Because the terminal resides in slot 0, the DeviceNet scanner is automatically assigned to slot 1.

DeviceNet Scanner Properties	×
General I/O Configuration	
Enter the scanner properties, and then click the I/O Configuration tab to define the I/O tables.	
Name: 2711P-RN10H DeviceNet Scanner	
Node Address: 02	
Slot in Virtual Backplane: 01	
Baud: 125k	
OK Cancel Apply Help	

### **Configure the Slave Inputs and Outputs**

You are now ready to configure the slave inputs and outputs in the PanelView Plus terminal. For the example used in this chapter, the 1756-DNB DeviceNet module will scan these inputs and outputs.

- One DINT or 4 bytes of input data
- One DINT or 4 bytes of output data

**IMPORTANT** Typically these address blocks will be larger. Minimize the number of address blocks going to a single device.

What differentiates the PanelView Plus terminal as a slave or a scanner is the node you specify for each block of data. The device you configure data for via the I/O Configuration tab is the slave on the network. If the device node matches the node address for the PanelView Plus terminal, then it will operate as a slave. In this example, the node address is 2.

### **Definition of Inputs and Outputs**

Inputs and outputs are in reference to the PanelView Plus DeviceNet module and correspond to RSNetWorx terminology. In other words, the output of a controller is an input to the PanelView Plus terminal. RSView ME software can read inputs and outputs, but only write to outputs configured in the PanelView Plus terminal.

Configure the Slave Input Data

**1.** On the I/O Configuration tab, right-click the Input icon and select Add Address Block.



**2.** In the Address Block Properties dialog, set the Start Byte to 0, Length in Bytes to 4, and click OK.

Specify a start byte (using the Input or Output / Scanlist Configuration Tool) and the block leng conversion may be necessary.	ddress from the RSNetWorx th. Note that a word-to-byte
Start Byte: 0	Access finput C Output
ОК	Cancel Help

The address block 0-3 Bytes is added under Inputs.

**3.** Right-click on the new address block 0-3 Bytes and select Add Device to define the PanelView Plus terminal as the slave for the input address block.

DeviceNet Scanner Pro	perties		×
General 1/0 Configurat	ion		
PCIDS			
Output	Add Device Add Alias Delete		
	Properties		
OK	Cancel	Apply	Help

**4.** In the Device Properties dialog of the input address block, select Node 2 and click OK.

Because the device node is the same node as the PanelView Plus terminal, Node 2 will operate as a slave for the input data. The 1756-DNB scanner will scan this data.



A dimmed icon appears under the Input address block for Device 02. This indicates the PanelView Plus terminal is the slave.



#### Create an Input Alias

To make connections to objects, aliases are required. You must create an alias for the input address block. The aliases serve as the connection reference you select in RSView Studio software.

**1.** Right-click the 0-3 Bytes icon and select Add Alias.



- **2.** In the Alias Properties dialog, select these properties and click OK to add the alias to the input address block:
  - Alias Data Type = DINT
  - Alias Name = Slave\_Input
  - Start Byte = 0
  - Array Count = 1

Alias Properties: NewAl	lias-0000 - Input - 0-3 Bytes	×
Select the alias data type fi	or this alias, and then define its properties.	_
Alias Data Type:	Alias Properties:	
Strings     Strings	Alias Name Name: Slave_Input Address Specify the address values or type the address string.  Start Byte:  Array Count:  Address String:  OO Swapping Swap Bytes Swap Bytes Swap Words Initialization Initial Value:	
DINT 22 bit Signed (Lor	an) Internet Barran 0147400540 in 0147400547	
UNINT - 52-bit, Signed (Lor	iyj megel. Indrige -2147403040 tu 2147403047	
	OK Cancel Apply Next Help	

The Array Count lets you quickly configure multiple aliases with the same prefix.

Swapping of bytes or words is necessary for some controllers such as SLC controller. Refer to Help for more information.

The slave input is now configured with:

- Address length of 4 bytes, starting at byte 0
- Slave device at node 2, which is the PanelView Plus terminal
- Alias of Slave\_Input for the input address block



#### Configure the Slave Output Data

Follow the same procedure to add a slave output block to the I/O configuration. The 1756-DNB DeviceNet scanner will scan this output.

**1.** On the I/O Configuration tab, right-click the Output icon and select Add Address Block.



**2.** In the Address Block Properties dialog, set the Start Byte to 0, Length in Bytes to 4, and click OK.

Address Block Properties	×
Specify a start byte (using the Input or Output Ac Scanlist Configuration Tool) and the block length conversion may be necessary.	Idress from the RSNetWorx n. Note that a word-to-byte
Start Byte: 0	Access C Input C Dutput
OK	Cancel Help

The address block 0-3 Bytes is added under Outputs.

**3.** Right-click the new address block 0-3 Bytes and select Add Device to define the PanelView Plus terminal as the slave for the output address block.



**4.** In the Device Properties dialog for the output address block, select Node 2 and click OK.

Similar to the input data, the PanelView Plus terminal will operate as a slave for the output data. The 1756-DNB scanner will scan this output data.

Device Properties: 00, Device 0-3 - Output - 0-3 Bytes	x
Use the data from the RSNetWorx Scanlist Configuration Tool to specify a device.	
Start Byte: 0	
Length: 4	
Node:	
OK Cancel Help	

A dimmed icon appears under the Output address block for Device 02 . This indicates the PanelView Plus terminal is the slave.



#### Create an Output Alias

To make connections to objects, aliases are required. Similar to the input alias, you must create an alias for the output block.

1. Right-click the 0-3 Bytes icon under Output and select Add Alias.



- **2.** In the Alias Properties dialog, select these properties and then click OK to add the alias to the output address block:
  - Alias Data Type = DINT
  - Alias Name = Slave\_Output
  - Start Byte = 0
  - Array Count = 1
  - Initial Value = 0

If you do not enter an initial value, a warning message indicates that default values will be used.

Alias Properties: NewAl	ias-0002 - Output - 0-3 Bytes	×
Select the alias data type fo	or this alias, and then define its properties.	
Alias Data Type:	Alias Properties: Alias Name	
DINT UDINT REAL BITSERIES ⊕-Bit	Start Byte: 0 * * * * * * * * * * * * * * * * * *	
	Swapping Swap Bytes Swap Words Initialization	
DINT - 32-bit, Signed (Lor	g) Integer. Range -2147483648 to 2147483647 OK Cancel Apply Next Help	

The slave output is now configured with the following information:

- Address length of 4 bytes, starting at byte 0.
- Slave device on node 2, which is the PanelView Plus terminal.
- Alias of Slave\_Output for the output address block.

DeviceNet Scanner Properties	×
General I/O Configuration	
<ul> <li>PCIDS</li> <li>Input</li> <li>Input</li> <li>Imput</li> <li>Imput</li> <li>Imput</li> <li>Imput</li> <li>Slave_Input 0-3</li> <li>Output</li> <li>Imput</li> <li></li></ul>	
OK Cancel Apply Help	

**3.** Click OK to save the configuration.

### **Create a Shortcut**

The Local tab in the Communciation Setup allows the aliases you created to be browsed from within RSView Studio software. It also lets you to test run the application on a PC with a 1784-PCIDS DeviceNet PCI Communication Interface card.



DeviceNet network is not supported on a PC running RSView Machine Edition software.

Create a shortcut for the PanelView Plus communication setup and apply it the DeviceNet driver that was added to the backplane.

- 1. From the Communication Setup dialog click Add.
- 2. For this example, enter DNET as the name of the shortcut.

**3.** With the new shortcut selected and while on the Local tab, select the 2711P-RN10H DeviceNet Scanner.

D Communication Setup - RNA://\$Local/DeviceNet/RSL	nx Enterprise
Add a device shortcut that specifies two communication paths. Cl development and testing. Click Target to specify a second path for Device Shortcuts DNET DNET DNET DNET	ck Local to specify one path on this computer for application r use by the target device. et
Mode: Online	Not Browsing
Cifline Tag I	le <u>B</u> rowse
Add Remove Apply	Copy OK Cancel Help

4. Click Apply.

The shortcut has been applied to the DeviceNet driver.

## **Browse for Tags**

While you are creating an RSView Machine Edition application, you will be creating objects and assigning tags in the Connection tab.

The structure of the DeviceNet Input Table looks like this when browsing for tags.

🔗 Tag Browser			? ×
Folders	Contents of V::DNET	/Online/InputTable'	
DeviceNet     Diagnostic Items     Online     OutputTable     System	Name	Description	
Tag filter: KNone>			•
Selected Tag			_
Home area: /			
	ок Са	ancel <u>H</u>	elp

Folders	Contents of '/::DNET/Online/OutputTable'	-
DeviceNet     Dist     Dist     Diagnostic Items     Online     InputTable     system	Name Description	
Tag filter: KNone>		Ŧ
Selected Tag [DNET]OutputTable.Slave_Output		
Jama yaay /		

The structure of the DeviceNet Output Table looks like this when browsing for tags.

## **Copy RSLinx Configuration to the Target Tab**

When the application is complete, you must copy the RSLinx configuration from the Local tab to the Target tab before you compile the .mer file.

The Target tab contains the configuration the PanelView Plus terminal uses to run the application. For I/O network configurations such as DeviceNet, the shortcut configurations should be the same. For other protocols, it is not necessary to have identical configurations.

n 🖡 Communication Setup - RNA://\$Local/Devi	iceNet/RSLinx Enterprise	_ 🗆 X
Add a device shortcut that specifies two communica development and testing. Click Target to specify a su Device Shortcuts	ation paths. Click Local to specify one path on this computer for application record path for use by the target device.	wse
Add <u>H</u> emove Apply	Lopy OK Cancel	<u>H</u> elp

#### **1.** Click Copy in Communication Setup.

#### The following dialog opens.

RSLinx Enterprise	×
The Target configuration and shortcut de definitions.	initions will be replaced with a copy of the Local configuration and shortcut
Do you want to continue?	
	Yes No

2. Click Yes.

The Communications Setup dialog will appear.

**3.** Click OK from the Communications Setup dialog to save the configuration and close the dialog.

Create a runtime .mer file and download it to the PanelView Plus terminal. Load the application in the terminal but do not run the application. You must map the data between the PanelView Plus terminal and the 1756-DNB scanner using RSNetWorx for DeviceNet software.

# Configure RSNetWorx for DeviceNet Software

This section shows how to create a DeviceNet configuration using RSNetWorx for DeviceNet software. You must now map the PanelView Plus I/O configuration to the 1756-DNB DeviceNet module.

- Open RSNetWorx for DeviceNet software by selecting Start > Menu > Programs > Rockwell Software > RSNetWorx > RSNetworx for DeviceNet.
- 2. Create a new DeviceNet configuration and click OK.

DeviceNet - R5NetWorx for DeviceNet	_ 🗆 🗵
Eile Edit View Network Device Diagnostics Tools Help	8 8
12   🛎 - 🔛 🎒 X 🖻 🖻 🕅	
(④ Q) [目 性] 輕 → 品   ↓   國 [2]	
Hardware 🔤 🗾 🔟	<b>A</b>
New File	
Configuration Types Description	
AC Drive	
Barcode Scanner BeviceNet Configuration DeviceNet Files (*.dnt)	
🗈 🕼 🏠 Communication Adapter	
E Contactor	
OPI to DeviceNet	
Produce EXISTANCE OK Cancel	
Human Machine Interface	
Inductive Proximity Switch	
	<u> </u>
Lingth ( Spreadsheet ) Master/Slave Configuration ) Diagnostics /	
Ready Offline	11.

The example configuration uses online browsing for devices on the DeviceNet network.

- **3.** Make sure all connections are made and that the communication rates match on all devices.
- **4.** On the PanelView Plus, load the runtime .mer application in RSView Machine Edition, but do not run it as this time.

Do not run the application until the scanlist is downloaded to the terminal. A scanlist will not download to the terminal if the application is running.

**5.** When the network and devices are ready, go online by clicking the icon on the toolbar.



IMPORTANT

The Browse for Network dialog opens.

I✓ Autobr	owse R	efresh		
₩wo ₽₽ ₽₽ ₽ ₽ ₽ ₽ ₽ ₽ ₽ ₽ ₽ ₽ ₽ ₽ ₽ ₽ ₽ ₽	Horadon, USE Linx Gateway AB_DF1-1, Di AB_DF1-1, Di AB_ETH-1, Et 10.10.10.10 10.10.10.10 10.10.10.10 10.10.10.10 10.10.10.10.10.10 10.10.10.10.10.10.10.10.10.10.10.10.10.1	RIVAME ys, Ethernet F1 .2, PanelView .4, 1756-ENB ylane, 1756-A 0, 1756-L63 L 1, 1756-ENBT 2, 1756-DNB, A. DeviceN 01, 175 02, PV	Plus 1250, F [/A, 1756-Er 4/A OGIX5563, [ /A 1756-DNB D 20 56-DNB Plus/ PV Plu	PanelView-Plus NBT/A DeviceNet eviceNet Scanne IS CE DeviceNet

6. Select the path of the DeviceNet network and click OK.

When the network is scanned, the devices display in the network dialog. The dialog shows an icon for both the 1756-DNB module and the PanelView Plus/PanelView Plus CE DeviceNet.



## Configure Slave I/O for the PanelView Plus Terminal

You must configure the slave I/O before adding it to the 1756-DNB scanlist. This section shows how to configure slave I/O for the PanelView Plus terminal.

**1.** Double-click the PanelView Plus/PanelView Plus CE DeviceNet icon to view the general properties.

PV Plus/PV Plu	us CE DeviceNet	? ×	
General Modul	le Scanlist Input Output ADR Summary		
PV	Plus/PV Plus CE DeviceNet		
<u>N</u> ame:	PV Plus/PV Plus CE DeviceNet		
Description:			
Add <u>r</u> ess:	2		
_ Device Ident	ity [ Primary ]		
Vendor:	Rockwell Automation - Allen-Bradley [1]		
Type:	Communication Adapter [12]		
Device:	Device: PV Plus/PV Plus CE DeviceNet		
Catalog:	Catalog: 2711P-RN10H		
Revision:	3.016	•	
		Lala I	
		eip	

**2.** Select the Module tab.

Because you are editing the configuration online, you are prompted to:

- upload the current configuration in the module.
- download the configuration from the software.



**3.** Click the Upload button to edit the configuration.

When the upload is complete the Module tab appears.

ieneral Module Scan	list   Input   Output	ADR Summary
Interscan Delay:	10 📑 msec	Upload from Scanner
Foreground to Background <u>P</u> oll Ratio:	1 .	Download to Scanner
		Module Defaults
		Slave Mode
		Ad <u>v</u> anced

**4.** Click Slave Mode.

The Slave Mode configuration dialog appears.

Slave Mode	<u>? ×</u>
Enable Slave Mode	ОК
Strobed:	Cancel
Output Size: D Bytes	Help
Polled:	Change of State / Cyclic:
Input Size: 0 🗾 Bytes	© <u>C</u> OS C Cyclic
Output Size:	Input Size: 0 🔤 Bytes
	Output Size: 0 🚊 Bytes

**5.** Check the Enable Slave Mode checkbox to enable Slave mode and edit the Slave mode configuration.

- **6.** Under Change of State / Cyclic, set these parameters to use Cyclic I/O messaging:
  - Select Cyclic
  - Input Size = 4
  - Output Size = 4

The configuration will transfer 4 bytes of input data and 4 bytes of output data using cyclic I/O messaging.

Slave Mode	<u>? ×</u>
🔽 Enable Slave Mode	OK
Strobed:	Cancel
Output Size: D 🔹 Bytes	Help
Polled:	Change of State / Cyclic:
Input Size: 0 📩 Bytes	O <u>C</u> OS O Cyclic
Output Size: 0 📑 Bytes	Input Size: 4 📑 Bytes
	Output Size: 4 📑 Bytes

TIP

The input size should match the size of the input address block in RSView Machine Edition software. Similarly, the output size of the output address block in RSView Machine Edition should also match.

7. Click OK to save the data.

### Map the I/O to the PanelView Plus Image Table

You must map the I/O data to the PanelView Plus image table so that it can be scanned by the 1756-DNB DeviceNet module.

1. Select the Input tab to map the input data to the image table.
|   | ∠<br>lave Mode>         | Type<br>Cyclic | Size<br>4            | Map<br>No      |            | Auto <u>M</u> ap |
|---|-------------------------|----------------|----------------------|----------------|------------|------------------|
|   |                         |                |                      |                |            | ∐nmap            |
|   |                         |                |                      |                |            | Advanced         |
| •   |                         |                |                      |                | •          | Options          |
|   |                         |                |                      |                |            |                  |
| M <u>e</u> mory:  | mage File               | -              | <u>S</u> tart        | Word:          | 0          | ÷                |
| M <u>e</u> mory: Ir<br>Bits 15 - 0                      | mage File<br>15 14 13 1 | ✓              | <u>S</u> tart<br>9 8 | Word:<br>7 6 ! | 0<br>5 4 3 |                  |
| Memory: II<br>Bits 15 - 0<br>0                          | mage File<br>15 14 13 1 | <b>1</b> 21110 | <u>S</u> tart<br>9 8 | Word:<br>7 6 9 | 0          |                  |
| Memory: In<br>Bits 15 - 0<br>0<br>1<br>2<br>3           | mage File<br>15 14 13 1 | 21110          | <u>S</u> tart<br>9 8 | Word:          | 0          |                  |
| Memory: II<br>Bits 15 - 0<br>0<br>1<br>2<br>3<br>4      | mage File<br>15 14 13 1 | 21110          | <u>S</u> tart<br>9 8 | Word:          | 0          |                  |
| Memory: II<br>Bits 15 - 0<br>0<br>1<br>2<br>3<br>4<br>5 | mage File               | 211110         | <u>S</u> tart<br>98  | Word:          | 0          |                  |

The input data you just configured appears in the top window.

**2.** Click AutoMap to map the data to the least significant word in the PanelView Plus input image table.

	Slave Mode>	Type Cyclic	Size Map 4 0.0		Auto <u>M</u> ap
					<u>U</u> nmap
					A <u>d</u> vanced.
4		-			Options
Memory:	Image File	-	Start Word		<b>_</b>
Bits 15 - 0	15 14 13 1	211110	9 8 7 6	54	
0		02,	<slave mo<="" td=""><td>de≻</td><td></td></slave>	de≻	
1		02,	<slave mo<="" td=""><td>de&gt;</td><td></td></slave>	de>	
3					
4					
5					
	10 V				100

	∠   Тур	e Size	Map	Auto <u>M</u> ap
	ауе модех сусі	IC 4	NO	Unmap
				A <u>d</u> vanced.
•				<u>Options</u>
M <u>e</u> mory: In	nage File	Star	Word: 0	-
Bits 15 - 0 1	514131211	10 9 8	7.6.5	43210
0		10 0 0		1012110
1				
2				
3				
<del>4</del> 5				
9				
6				
6 7				

**3.** Select the Output tab to view the output table.

**4.** Click AutoMap to map the output data to the least significant word in the PanelView Plus output image table.

💳 🗖 02, <si< th=""><th>ave Mode&gt; Cyclic</th><th>Size Ma</th><th>P</th><th>Auto<u>M</u>ap</th></si<>	ave Mode> Cyclic	Size Ma	P	Auto <u>M</u> ap
				<u>U</u> nmap
				Advanced
•			F	Options
M <u>e</u> mory: Ir	nage File 🗾	<u>S</u> tart Wor	d: 0	-
Bits 15 - 0 1	5 14 13 12 11 10	987	6 5 4	3 2 1 0 🔺
0	(	12, <slave mo<="" td=""><td>ode&gt;</td><td></td></slave>	ode>	
2		I2, <slave mo<="" td=""><td>)de&gt;</td><td></td></slave>	)de>	
3				
4				

**5.** Click OK to save the configuration.

You are prompted to download the I/O configuration to the PanelView Plus terminal.

Scanner	Configuration	Applet		×
?	Do you want t	o download thes	e changes to the	e device?
	Yes	No	Cancel	

 $\boldsymbol{6.}$  Click Yes to download the I/O configuration.

## Map the PanelView Plus I/O to the 1756-DNB Scanlist

You can now add the PanelView Plus I/O data to the scanlist of the 1756-DNB DeviceNet module.

**1.** In the network dialog, double-click the 1756-DNB icon to access the 1756-DNB properties.

1756-DNB ? X
General Module Scanlist Input Output ADR Summary
1756-DNB
<u>Name:</u> 1756-DNB
Description:
Add <u>r</u> ess: 1
Device Identity [ Primary ]
Vendor: Rockwell Automation - Allen-Bradley [1]
Type: Communication Adapter [12]
Device: 1756-DNB [14]
Catalog: 1756-DNB
Revision: 7.001
OK Cancel Apply Help

**2.** Select the Module tab.

Because you are editing the configuration online, you are prompted to:

- upload the current configuration in the module.
- download the configuration from the software.

Scanner (	Configuration Applet
?	Do you want to upload the configuration from the device, updating the software's configuration; or download the software's configuration to the device, updating the device?
	For more information, press F1
	Upload Download Cancel

**3.** Click Upload to edit the current configuration.

When the upload is complete, the module tab will open.

**4.** From the Module tab, select Slot 2 which is the location of the 1756-DNB module in the ControlLogix rack.

1756-DNB	<u>? ×</u>
General Module Scanlist Input Output	ADR Summary
Interscan Delay: 4 msec Foreground to Background Poll Ratio: 1	Upload from Scanner         Download to Scanner         Module Defaults         Slave Mode         Adyanced
1756-DNB: Sjot: 🛛 🛫	
OK Cancel	Apply Help

**5.** Select the Scanlist tab to view and edit the 1756-DNB scanlist. The PanelView Plus terminal appears as an available device. This means you can add it to the scanlist.

02, PV Plus/PV Plus CE De	> < >>
✓ Automap on Add	Node Agtive     Electronic Key:     Device Type
	Vendor

eneral   Module   Scanlist   Inp	put Output ADR Summary
Availa <u>b</u> le Devices:	Scanlist:
	000.00
Automap on Add	✓ Node Active     Electronic Key:     ✓ Device Lype     ✓ Yendor

The Automap on Add checkbox is selected. When you add the device to the scanlist, the slave inputs and outputs are automatically added to the input and output tables.



If the Automap on Add checkbox was not checked, you would need to manually map the data on the Input tab.

**7.** Select the Input tab to verify that the PanelView Plus I/O is mapped to the Input Assembly Data file.

the second se	Type	Size	Мар			AutoMap
- 02, PV .	Cyclic	4	2:1.Data	0].0		
						<u>U</u> nmap
						Advanced.
•		1			F I	Options
		in lance	8		-	1000
M <u>e</u> mory: As Bits 31 - 0	sembly Dat	° ∠ ∏∏]	<u>S</u> tart [	)Word:		
Memory: As Bits 31 - 0	sembly Dat	a ⊻ 11111 2 PV P	<u>S</u> tart [			
Memory: As Bits 31 - 0 2:1.Data[0] 2:1.Data[1]	sembly Dat	a <u>▼</u> 12, PV P	<u>S</u> tart [ 	)Word:     us CE De		
Memory: As Bits 31 - 0 2:I.Data[0] 2:I.Data[1] 2:I.Data[2]	sembly Dat	a ⊻ 12, PV F	<u>S</u> tart [ lus/PV Pl	)Word:    .is CE De	viceNe	±
Memory: As Bits 31 - 0 2:1.Data[0] 2:1.Data[1] 2:1.Data[2] 2:1.Data[3]	sembly Dat	a 🗾	<u>S</u> tart I	)Word:   	U wiceNe	÷ 1
Memory: As Bits 31 - 0 2:1.Data[0] 2:1.Data[1] 2:1.Data[2] 2:1.Data[3] 2:1.Data[4]	sembly Dat	a 🗾	<u>S</u> tart [ 	)Word:   us CE De	U viceNe	±
Memory: As Bits 31 - 0 2:1.Data[0] 2:1.Data[1] 2:1.Data[2] 2:1.Data[3] 2:1.Data[4] 2:1.Data[5]	sembly Dat	a 🗾	<u>S</u> tart [	)Word:   us CE De	viceNe	÷
Memory: As Bits 31 - 0 2:1.Data[0] 2:1.Data[1] 2:1.Data[2] 2:1.Data[3] 2:1.Data[5] 2:1.Data[5] 2:1.Data[6]	sembly Dat	a 🗾	Start [	)Word:   	viceNe	÷

The DINT slave output (Slave\_Output) created for the PanelView Plus terminal in RSLinx Enterprise software resides in the first 4 bytes of the 1756-DNB input table.

**6.** Select the PanelView Plus device and click > to add the device to the scanlist.

**8.** Select the Output tab to verify that the PanelView Plus I/O is mapped to the 1756-DNB output image file.

norar I modulo	1	.T.mpa	Outp		{   Su	mmary	
Node /	Туре	Size	Мар	101.0		Auto	оМар
	Gyclic	4	2:U.Data	a[U].U		Un	map
						Adva	nced
						0-6	
•					•		ons
<b>∢ </b> M <u>e</u> mory: As	sembly Da	ita 💌	<u>S</u> tart	DWord:	•  0	<u>up</u> n ÷	ions
✓Iemory: As Bits 31 - 0	sembly Da	ita 💌	<u>S</u> tart	DWord:		<u>up</u> n E	ons
✓	sembly Da	ita 💌	<u>S</u> tart	DWord:			ons
	sembly Da	ita ▼ 02, PV	<u>S</u> tart	DWord:			ons
Memory:         As           Bits 31 - 0         2:0.Data[0]           2:0.Data[1]         2:0.Data[1]	sembly Da	.ta ▼ 02, PV	<u>S</u> tart	DWord:	DeviceN		ons
Memory:         As           Bits 31 - 0         2:0.Data[0]           2:0.Data[1]         2:0.Data[2]           2:0.Data[2]         2:0.Data[3]	sembly Da	lta ▼ 02, PV	<u>S</u> tart	DWord:			
Memory:         As           Bits 31 - 0         2:0.Data[0]           2:0.Data[1]         2:0.Data[2]           2:0.Data[3]         2:0.Data[4]	sembly Da	ita 💌	<u>S</u> tart	DWord:	DeviceN	pn	
	sembly Da	ita ▼ 02, PV	<u>S</u> tart	DWord:	DeviceN		ons
Image: Assessment of the second sec	sembly Da	ita ▼ 02, PV	<u>S</u> tart	DWord:			ons
Mgmory:         As           Bits 31 - 0         2:0.Data[0]           2:0.Data[1]         2:0.Data[1]           2:0.Data[2]         2:0.Data[3]           2:0.Data[3]         2:0.Data[4]           2:0.Data[4]         2:0.Data[4]           2:0.Data[4]         2:0.Data[4]           2:0.Data[4]         2:0.Data[4]           2:0.Data[5]         2:0.Data[6]           2:0.Data[7]         2:0.Data[7]	sembly Da	ita ▼ 02, PV	<u>S</u> tart	DWord:	DeviceN	pn	ons

The DINT slave input (Slave\_Input alias) created for the PanelView Plus slave in RSLinx Enterprise software resides in the first 4 bytes of the 1756-DNB output table.

9. Click OK.

You are prompted to download the changes to the 1756-DNB module.



**10.** Click Yes to download the configuration.

The 1756-DNB module is now configured to scan the slave I/O in the PanelView Plus terminal.

### Summary

The scanlists are now configured for both the 1756-DNB DeviceNet module and the PanelView Plus terminal.

**IMPORTANT** To change the scanlist for a device on the network, you must place the device in Idle mode before downloading the changes. On the PanelView Plus terminal, you can load the application but not run it.

**Use RSLogix 5000 Software** 

You must now add the DeviceNet I/O configuration in the 1756-DNB module to the controller tags database in RSLogix 5000 software. You can then put the 1756-DNB module in Run mode and initiate data transfer.

For these examples, the module is in slot 0.

- 1. Verify that the 1756-L63 ControlLogix processor is in slot 0.
- 2. Open a new application.
- 3. Right-click the I/O Configuration icon and select New Module.



RSLogix 5000 - DNET_Demo [1756-L6	3)*-[Controller Tags - DNET_Demo(controller)] To Do List unications Tools Window Help	_ D × _ 8 ×
Image: Second	Image: Construction     Image: Construct	
Controller DNET_Demo Controller Tags Controller Fault Handler Controller Fault Handler Tasks Controller Fault Handler Co	Scoge:     DNET_Demo     Show All       Name     A Value     Force Mask       Select Module     X       Module     Description       Controllers     Controllers       Digital     Drives       Module     Other       Specialty     Specialty	Descri
Bus Size 7	Eind     Add Favorite       By Category     By Vendor       Favorites       OK       Cancel       Help	

The By Category tab displays a list of module types.

### 4. Expand Communications and select 1756-DNB.

Image: Solid Content of the solid content	3]* - [Controller Tags - DNET_Demo(co unications <u>T</u> ools <u>W</u> indow Help	ntroller)] <mark>To Do List</mark>		_ 🗆 ×
Image: Second	ID/ IM/	Image: Solution of the second seco		
Controller DNET_Demo Controller Tags Controller Tags MainTask MainTask MainTask Muscheduled Programs / Phases Motion Groups Motion Groups Motion Groups Motion Groups Motion Groups Prodefined Data Types Predefined Predefined 1/25 Backplane, 1756-A7 1/25 B	Scoge: DINET_Demo Sh Name Select Module Module 1756-CN8/A - 1756-CN8/A - 1756-CN8/C - 1756-CN8/E - 1756-CN8/C - 1756-CN8/C	Show All     All     Value     Force Mask     Style     Description     1756 ControlNet Bridge     1756 ControlNet Bridge     1756 ControlNet Bridge     1756 ControlNet Bridge     1756 ControlNet Bridge, Redundant Media     1756 ControlNet Bridge, Redundant Media     1756 ControlNet Bridge, Redundant Media     1756 DH+ Bridge,RIO Scanner     1756 DH+ Bridge/RIO Scanner     1	Data Type	Descriţ.▲
				▼ 

After selecting the module, you are prompted to select the Major Revision of the 1756-DNB module.

Select Major Revision			×
Select major revis being created.	ion for new 175	6-DNB module	
Major Revision:	7	<b>_</b>	
ОК	Cancel	Help	

**5.** Select the Major Revision of the module installed in the ControlLogix rack and select OK.

- 6. In the New Module dialog, enter these parameters:
  - name for the module.
  - slot location of the 1756-DNB module in the ControlLogix rack, in this case, slot 2.

RSLogix 5000 - DNET_Demo [1756-]	53] To Do List	_0×
Offline RUN No Forces CK No Edits BAT Redundancy 3-2	Image: Second	
Controller DNET Demo Controller Tags Controller Fault Handler Power-Up Handler Tasks Tasks Tasks Transk Unscheduled Programs / Phases Unscheduled Programs / Phases Produced Programs /	New Module       Type:       1756-DNB 1756 DeviceNet Scanner         Vendor:       Allen-Bradley         Nage:       DNB         Description:       Input Size:       124 allen (32-bit)         Description:       Imput Size:       123 allen (32-bit)         Node:       1 allen Sigt:       2 allen (32-bit)         Node:       1 allen (32-bit)       Status Size:       32 allen (32-bit)         Node:       1 allen (32-bit)       Status Size:       32 allen (32-bit)         Node:       1 allen (32-bit)       Status Size:       32 allen (32-bit)         Node:       1 allen (32-bit)       Status Size:       32 allen (32-bit)         Vode:       1 allen (32-bit)       Status Size:       32 allen (32-bit)         Vode:       1 allen (32-bit)       Status Size:       32 allen (32-bit)         Vode:       1 allen (32-bit)       Status Size:       32 allen (32-bit)         Vode:       1 allen (32-bit)       Status Size:       32 allen (32-bit)         Vode:       1 allen (32-bit)       Status Size:       32 allen (32-bit)         Vode:       1 allen (32-bit)       Status Size:       32 allen (32-bit)         Vode:       1 allen (32-bit)       Status Size:       32 allen (32-bit)	

7. Click OK.

You have just added the 1756-DNB module I/O configuration to the ControlLogix controller tag database.



**8.** To view the tags, double-click the Controller Tags icon in the tree.

Notice that the input, output, and status tags are specific to the slot the 1756-DNB module resides in, which is slot 2. The inputs and outputs mapped in RSNetWorx software now reside in:

- Local:2:I.Data array for inputs.
- Local:2:O:Data array for outputs.
- **9.** To enable DeviceNet communications, put the DeviceNet 1756-DNB module in Run mode by setting the run mode bit in the output command register.

Local:2:O.Command.Register.Run.

You can do this in the ladder logic or by accessing the tag directly.

**10.** Download the program to the ControlLogix processor and put the program in run mode.

# **Configure the Terminal as a Scanner**

**Chapter Objectives** The procedures in this chapter build on the example configuration in Chapter 2. In this chapter, you will configure the PanelView Plus as a scanner and the 1756-DNB DeviceNet module as the slave device. The PanelView Plus will scan I/O from the 1756-DNB DeviceNet module.

### **Configure Communications**

In this section, you will learn how to:

- configure slave input and output data for the 1756-DNB module.
- view the structure of the DeviceNet input and output table when browsing for tags.
- copy the RSLinx software configuration to the Target tab.

### **Configure the Slave Inputs and Outputs**

**IMPORTANT** To change the scanlist for a device on the network, you must place the device in Idle mode before downloading the changes. For the PanelView Plus, you can load the application but not run it. For the 1756-DNB module, put the ControlLogix processor in Program mode.

To place the device in Idle mode:

- For the PanelView Plus, load the application but do not run it.
- For the 1756-DNB module, put the ControlLogix 1756-L63 processor in Program mode. This action will clear the run bit Local:2:O.CommandRegister.Run.

You are now ready to configure the slave inputs and outputs in the 1756-DNB module. The PanelView Plus terminal will scan these inputs and outputs.

- One DINT or four bytes of input data, starting at byte 4.
- One DINT or four bytes of output data, starting at byte 4.

The PanelView Plus can scan 2048 bytes of input data and 2048 bytes of output data. The number of input and output bytes is minus any slave I/O data configured in the PanelView Plus.

For each block of data, you will enter the node address of the 1756-DNB DeviceNet module to indicate that the module is the slave device. The node address of the 1756-DNB module for the sample configuration is node 1.

### **Configure the Scanner Input Data**

You are now ready to configure the scanner input data. You will do this in Communications Setup in RSView Machine Edition under RSLinx Enterprise software.

The example used in this chapter builds from the Slave configuration example. You can configure a PanelView Plus terminal as both a scanner and slave for the same application.

**1.** On the I/O Configuration Tab, right-click the Input icon and select Add Address Block.



**2.** In the Address Block Properties dialog set the Start Byte to 4, Length in Bytes to 4, and click OK.

Address Block Properties	×		
Specify a start byte (using the Input or Output Address from the RSNetWorx Scanlist Configuration Tool) and the block length. Note that a word-to-byte conversion may be necessary.			
Start Byte: 4	Access		
Length in Bytes:	C Output		
OK	Cancel Help		

The address block 4-7 Bytes is added under Inputs.

**3.** Right-click the new 4-7 address block Bytes and select Add Device to define the 1756-DNB DeviceNet module as the slave device for the input address block.



**4.** In the Device Properties dialog for the input address block, select the node of the slave device, in this example Node 1, and click OK.

Node 1 indicates that the 1746-DNB module will operate as the slave for the input data. The PanelView Plus will scan this data from the module.

Device Properties: 00, Device 4-7 - Input - 4-7 Bytes	×
Use the data from the RSNetWorx Scanlist Configuration Tool to specify a device.	
Start Byte: 4	
Length: 4	
Node:	
OK Cancel Help	

#### Create an Input Alias

To make connections to objects, aliases are required. You must create an alias for the input address block. **1.** Right-click the 4-7 Bytes icon and select Add Alias.



- **2.** In the Alias Properties dialog, select these properties and then click OK to add the alias to the input address block:
  - Alias Data Type = DINT
  - Alias Name = Scanner\_Input
  - Start Byte = 4
  - Array Count = 1

Alias Properties: NewAli	ias-0003 - Input - 4-7 Bytes	×
Select the alias data type fo	or this alias, and then define its properties.	
Alias Data Type: ⊕- Strings ⊡- Numbers	Alias Properties: Alias Name	
SINT USINT	Name: Scanner_Input Address	
INT UINT	Specify the address values or type the address string.	
UDINT 	Start Byte: 4	
BITSERIES ⊕-Bit	Address String: 04	
	Swapping	-
	Swap Bytes Swap Words	
	Initial Value:	
DINT - 32-bit, Signed (Long) Integer. Range -2147483648 to 2147483647		
	OK Cancel Apply Next Help	

The slave input is now configured with:

- Address block of four bytes, starting at byte 4
- Slave device on node 1, which is the 1756-DNB module
- Alias of Scanner\_Input for the input address block

DeviceNet Scanner I	Properties		×
General 1/0 Config	uration		
□       ●       PCIDS         □       ■       Input         □       ■       □         □       ■       □       0.3 [0]         □       ■       □       0.3 [0]         □       ■       □       0.3 [0]         □       ■       □       0.1 [0]         □       ■       ■       □         □       ■       ■       0.1 [0]         □       ■       ■       □         □       ■       ■       □         □       ■       □       □         □       ■       □       □         □       □       □       □         □       □       □       □         □       □       □       □         □       □       □       □         □       □       □       □         □       □       □       □         □       □       □       □         □       □       □       □         □       □       □       □         □       □       □       □         □       □	Bytes 12, Device 0-3 Slave_Input 0-3 Sytes 11, Device 4-7 Scanner_Input 4-7 Bytes 12, Device 0-3 Slave_Output 0-3		
OK	Cancel	Apply	Help

#### Configure the Scanner Output Data

You are now ready to configure the scanner output data. You will do this in Communications Setup in RSView Machine Edition under RSLinx Enterprise software.

You can configure a PanelView Plus terminal as both a scanner and slave for the same application. Add a scanner output block to the I/O configuration. The PanelView Plus terminal will scan this output block.

1. Right-click the Output icon to add an Address Block.



**2.** In the Address Block Properties dialog, set the Start Byte to 4, Length in Bytes to 4, and click OK.

Address Block Properties	×		
Specify a start byte (using the Input or Output Address from the RSNetWorx Scaniist Configuration Tool) and the block length. Note that a word-to-byte conversion may be necessary.			
Start Byte: 4	Access		
Length in Bytes:	🕫 Output		
OK	Cancel Help		

The address block 4-7 Bytes is added under Outputs.

**3.** Right-click the new address block 4-7 Bytes and select Add Device to define the 1756-DNB module as the slave device for the output block.



**4.** In the Device Properties dialog for the output address block, select Node 1 and click OK.

Similar to the input data, the 1756-DNB module will operate as a slave for the output data. The PanelView Plus will scan this output data from the module.

Device Properties: 00, Device 4-7 - Output - 4-7 Bytes	×
Use the data from the RSNetWorx Scanlist Configuration Tool to specify a device.	
Start Byte: 4	
Length: 4	
Node:	
OK Cancel Help	

#### Create an Output Alias

Similar to the input alias, you need to create an alias for the output block.

**1.** Right-click the 4-7 Bytes icon under Output and select Add Alias.



- **2.** In the Alias Properties dialog, select these properties and then click OK to add the alias to the address block:
  - Alias Data Type = DINT
  - Alias Name = Scanner\_Output
  - Start Byte = 4
  - Array Count = 1
  - Initial Value = 0

If you do not enter an initial value, a warning message indicates that default values will be used.

Alias Properties: NewAlias-0004 - Output - 4-7 Bytes			
Select the alias data type for	or this alias, and then define its properties.		
Select the alias data type for Alias Data Type: B Strings SINT USINT USINT UINT DINT UDINT REAL BITSERIES	or this alias, and then define its properties. Alias Properties: Alias Name Name: Scanner_Output Address Specify the address values or type the address string. Start Byte: 4 Array Count: 1 2		
Bit	Address String: 04		
	Swapping	-	
	Initialization Swap Words	_	
	Initial Value: 0		
DINT - 32-bit, Signed (Long) Integer. Range -2147483648 to 2147483647			
	OK Cancel Apply Next Help		

The scanner output is now configured with:

- Address block of four bytes, starting at byte 4
- Slave device on node 1, which is the 1756-DNB module
- Alias of Scanner\_Output for the output address block



**3.** Click OK to save the configuration.

a Communication Setup - RNA://\$Local/DeviceNet/RSLinx Enterprise	. 🗆 🗙
Add a device shortcut that specifies two communication paths. Click Local to specify one path on this computer for application development and testing. Click Target to specify a second path for use by the target device.  Device Shortcuts  Local Target  L	
Brows	e
Add Remove Apply Copy OK Cancel Help	р

**4.** To exit Communications Setup, click OK to save the configuration and close the dialog.

## **Browse for Tags**

The structure of the DeviceNet Input Table looks like this when browsing for tags.

🤗 Tag Browser		? ×
Select Tag		
Folders	Contents of V::DNET/0	nline/InputTable'
DeviceNet     DNET     Diagnostic Items     Online     DuputTable     OutputTable     System	Name Scanner_Input Slave_Input	Description
Tag filter: <a>KNone&gt;</a>		<b>_</b>
Selected Tag [DNET]InputTable.Scanner_Input Home area: /		
	OK Cano	el <u>H</u> elp

Both slave and scanned alias are listed together. It is important to create an alias that will be meaningful to you when you are developing your RSView Machine Edition application.

Select Tag			<u>?</u> ×
Folders	Contents of V::DNET/0	nline/OutputTable'	
DeviceNet     DNET     Diagnostic Items     Online     InputTable     System	Name Scanner_Output	Description	
Tag filter:			•
Selected Tag [[DNET]OutputTable.Scanner_Outp Home area: /	ut		
	OK Canc	el <u>H</u> elj	

The structure of the DeviceNet Output Table looks like this when browsing for tags.

### **Copy RSLinx Enterprise Configuration to the Target Tab**

When all the object connections are made and the application is complete, click Copy in Communication Setup to copy the RSLinx Enterprise configuration from the Local tab to the Target tab.

Create a runtime .mer file and download to the PanelView Plus terminal. Load the application in the terminal but do not run the application. You must first map the data between the PanelView Plus and the 1756-DNB scanner using RSNetWorx for DeviceNet software.

# Configure RSNetWorx for DeviceNet

In this section, you will use RSNetWorx for DeviceNet to configure slave I/O for the 1756-DNB DeviceNet module and map the I/O to the PanelView Plus terminal.

Before downloading the scanlists to the PanelView Plus and 1756-DNB module, the devices must be in Idle mode.

- For the PanelView Plus, load the application but do not run it.
- For the 1756-DNB module, put the ControlLogix 1756-L63 processor in Program mode. This action will clear the run bit Local:2:O.CommandRegister.Run.

### Configure Slave I/O for the 1756-DNB Module

To configure the slave inputs and outputs in the 1756-DNB module you must be online.

**1.** In the RSNetWorx for DeviceNet dialog, double-click the 1756-DNB icon to open the 1756-DNB properties dialog.

*DeviceNet - R5NetWorx for DeviceNet				
Eile Edit View Network Device Diagnostics	<u>T</u> ools <u>H</u> elp			8.9
🖹 🖆 • 🖬 🎒 X 🖻 🖻 😽	<u></u>			
_ € Q   E 1 🐺 • 🖁 🗛 👿 🙀				
Hardware 🔤 🖬	1756-DNB	PV Plus/PV Plus CE		*
🖻 🍘 Vendor	Sector Control of Cont	DeviceNet		
🗄 🍘 Automationdirect.com				
🕀 👘 Cutler-Hammer Products				
E Festo Corporation				
E Koyo Electronics	🖓			
E Omron Corporation	01	02		
E Rockwell Automation - Allen-Br				
E Rockwell Automation - Dodge				_
E Rockwell Automation - Electro-				
E 🖗 Rockwell Automation - Reliance				
Rockwell Automation/Entek Irc				
Hand Corporation				
Hestlock Controls Corp.				
		3800		<b>_</b>
	K ← ► M \ Graph / S	preadsheet ) Master/Slave Config	uration ) Diagnostics /	₹ ₹
Ready			Online - Not Brow	ising //.

The 1756-DNB	properties	dialog	opens.
--------------	------------	--------	--------

1756-DNB		? ×
General Modu	le Scanlist Input Output ADR Summary	
17	56-DNB	
<u>N</u> ame:	1756-DNB	
<u>D</u> escription:		
Add <u>r</u> ess:	1	
Vendor:	Rockwell Automation - Allen-Bradlev [1]	-
Type:	Communication Adapter [12]	-
Device:	1756-DNB [14]	-
Catalog:	1756-DNB	
Revision:	7.001	
	OK Cancel Apply H	lelp

**2.** Select the Module tab and verify that the slot number is 2.

1756-0	ONB							<u>?</u> ×
General	Module	Scanlist	Input	Outpu	t AD	R Sumi	mary	
<u>I</u> ntersc Foregr Backg	an Delay: ound to round <u>P</u> oll	Ratio:	4	∴ mser		_pload fror 2ownload t Module [ Slave № Adyan	n Scanne o Scanne Defaults 1ode ced	
- 1756 Sjo	S-DNB:	2						
		ОК	C	ancel		Apply	He	lp

Slot 2 is the location of the 1756-DNB module in the ControlLogix rack.

3. Click Slave Mode button.

The Slave Mode configuration dialog appears.

Slave Mode	<u>? ×</u>
Enable Slave Mode	OK
Strobed:	Cancel
Output Size: D Bytes	Help
Polled:	Change of State / Cyclic:
Input Size: Bytes	© COS C Cyclic
Output Size: 0 🔤 Butes	Input Size: 0 📑 Bytes
	Output Size: 0 📑 Bytes

- **4.** Check the Enable Slave Mode checkbox to enable Slave mode and edit the Slave mode configuration.
- **5.** Under Change of State / Cyclic, set these parameters to use Cyclic I/O messaging:
  - Select Cyclic
  - Input Size = 4
  - Output Size = 4

The configuration will transfer 4 bytes of input data and 4 bytes of output data using cyclic I/O messaging.

Slave Mode	<u>? ×</u>
☑ <u>E</u> nable Slave Mode	ОК
Strobed:	Cancel
Output Size: D Bytes	Help
Polled:	Change of State / Cyclic:
Input Size: 0 📑 Bytes	⊙ <u>C</u> OS ⊙ Cyclic
Output Size: 0 + Butes	Input Size: 4 📑 Bytes
	Output Size: 4 📑 Bytes

TIP

The input size should match the size of the input address block in RSView Machine Edition. Similarly, the output size of the output address block in RSView Machine Edition should also match.

6. Click OK to save the data.

### Map the I/O to the 1756-DNB Image Table

You must now map the I/O data to the image table of the 1756-DNB module so that it can be scanned by the PanelView Plus terminal.

**1.** Select the Input tab to map the input data to the image table. The input data just configured appears in the top window.

Node	△ Type Size Map	AutoMap
01, <sk< th=""><th>a Cyclic 4 No  Cyclic 4 2:1.Data[0]</th><th>].0</th></sk<>	a Cyclic 4 No Cyclic 4 2:1.Data[0]	].0
		Advanced.
•		Dptions
M <u>e</u> mory: A	ssembly Data <u>▼</u> <u>S</u> tart D\	Word: 0
M <u>e</u> mory: As Bits 31 - 0	ssembly Data <u>S</u> tart DV	Word: 0
M <u>e</u> mory: As Bits 31 - 0 2:1.Data[0]	ssembly Data Start DV	Vord: 0
Memory: As Bits 31 - 0 2:1.Data[0] 2:1.Data[1]	ssembly Data Start DV	Vord: 0
Memory: A: Bits 31 - 0 2:1.Data[0] 2:1.Data[1] 2:1.Data[2]	ssembly Data Start DV	Vord: 0
Memory: A: Bits 31 - 0 2:1.Data[0] 2:1.Data[1] 2:1.Data[2] 2:1.Data[3]	Ssembly Data Start DV	Vord: 0 *
Memory: A: Bits 31 - 0 2:1.Data[0] 2:1.Data[1] 2:1.Data[2] 2:1.Data[3] 2:1.Data[4]	Ssembly Data Start DV	Vord: 0
Memory: A: Bits 31 - 0 2:1.Data[0] 2:1.Data[1] 2:1.Data[2] 2:1.Data[3] 2:1.Data[4] 2:1.Data[5]	Ssembly Data Start DV	Vord: 0
Memory: As Bits 31 - 0 21.Data[0] 21.Data[1] 21.Data[1] 21.Data[2] 21.Data[3] 21.Data[4] 21.Data[5] 21.Data[6]	Ssembly Data Start DV	Vord: 0

**2.** Select node 1, which represents the 1756-DNB slave mode I/O and click AutoMap to map the data to the next least significant DWord in the 1756-DNB input image table.

NUGG	Type Size	Map	AutoMan
1 01. <sla.< th=""><th>Cvelie 4</th><th>2:1.Data[11.0</th><th>- Ангомар</th></sla.<>	Cvelie 4	2:1.Data[11.0	- Ангомар
02. FV	Cvelie 4	2:1.Data[0].0	,
<b></b> ,,.	-,		<u>U</u> nmap
			Advanced
1	90057000		Options
4			
Bits 31 - 0			
Bits 31 - 0 2:1.Data[0]	02. PV	Plus/ PV Plus CE De	
Bits 31 - 0 2:I.Data[0] 2:I.Data[1]	02, PV	Plus/ PV Plus CE De 01, <slave mode=""></slave>	viceNet
Bits 31 - 0 2:1.Data[0] 2:1.Data[1] 2:1.Data[2]	02, PV	Plus/ PV Plus CE De 01, <slave mode=""></slave>	viceNet
Bits 31 - 0 2:I.Data[0] 2:I.Data[1] 2:I.Data[2] 2:I.Data[3]	02, PV	Plus/ PV Plus CE De 01, <slave mode=""></slave>	viceNet
Bits 31 - 0 21.Data[0] 21.Data[1] 21.Data[2] 21.Data[2] 21.Data[3] 21.Data[4]	02, PV	Plus/ PV Plus CE De 01, <slave mode=""></slave>	viceNet
Bits 31 - 0 2:I.Data[0] 2:I.Data[1] 2:I.Data[2] 2:I.Data[3] 2:I.Data[4] 2:I.Data[5]	02, PV	Plus/ PV Plus CE De 01, <slave mode=""></slave>	viceNet
Bits 31 - 0 21.Data[0] 21.Data[1] 21.Data[1] 21.Data[2] 21.Data[3] 21.Data[3] 21.Data[5] 21.Data[6]	02, PV	Plus/ PV Plus CE De 01, <slave mode=""></slave>	viceNet

- 1756-DNB ? × General Module Scanlist Input Output ADR Summary ode 🛆 Type Size Map 1 01, <SL.. Cyclic 4 No 1 02, PV... Cyclic 4 2:0.D Node Auto<u>M</u>ap 2:0.Data[0].0 Unmap Advanced... Options... • Memory: Assembly Data 💌 Start DWord: 0 + Bits 31 - 0 2:0.Data[0] 2:0.Data[1] 2:0.Data[2] 2:0.Data[3] 2:0.Data[4] 02, PV Plus/ PV Plus CE DeviceNet 2:0.Data[5 2:0.Data[6 2:0.Data[7] 2:0.Data[8] -OK Cancel Apply Help
- **3.** Select the Output tab to view the output table.

**4.** Select node 1 and click AutoMap to map the output data to the least significant DWord in the 1756-DNB output image table.

Node 🗠	Type S	ize	Мар			AutoMap
严 🖞 01, <sl.< td=""><td>Cyclic 4</td><td>2</td><td>2:0.Data[1]</td><td>.0</td><td></td><td></td></sl.<>	Cyclic 4	2	2:0.Data[1]	.0		
- 02, PV	. Cyclic 4	2	2:0.Data[0]	.0		<u>U</u> nmap
						Advanced
•					1	Options
					_	
M <u>e</u> mory: Ass	embly Data	•	<u>S</u> tart DV	Vord: 0	_	
M <u>e</u> mory: Ass Bits 31 - 0	embly Data	Э Ш	<u>S</u> tart DV	vord: 0		3 1111110
Memory: Ass Bits 31 - 0 2:0.Data[0]	embly Data		Start DV	Vord: 0		
Mgmory: Ass Bits 31 - 0 2:0.Data[0] 2:0.Data[1]	embly Data		Start DV	Vord: 0		
Memory: Ass Bits 31 - 0 2:0.Data[0] 2:0.Data[1] 2:0.Data[2]	embly Data	PV PI	Start DV	Vord: 0		
Memory: Ass Bits 31 - 0 2:0.Data[0] 2:0.Data[1] 2:0.Data[2] 2:0.Data[3]	embly Data	PV P	<u>S</u> tart DV	Vord: 0	viceN	
Memory: Ass Bits 31 - 0 2:0.Data[0] 2:0.Data[1] 2:0.Data[2] 2:0.Data[3] 2:0.Data[4]	embly Data	PV PI	<u>S</u> tart DV LLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLLL	Vord: 0 s CE De Mode>	viceN	
Memory: Ass Bits 31 - 0 2:0.Data[0] 2:0.Data[1] 2:0.Data[2] 2:0.Data[3] 2:0.Data[4] 2:0.Data[5]	embly Data	PV P	<u>S</u> tart DV LLLLL Lus/ PV Plu 01, <slave< td=""><td>Vord: 0</td><td>viceN</td><td>iet</td></slave<>	Vord: 0	viceN	iet
Memory: Ass Bits 31 - 0 2:0.Data[0] 2:0.Data[1] 2:0.Data[2] 2:0.Data[3] 2:0.Data[4] 2:0.Data[5] 2:0.Data[6]	embly Data	PV PI	Start DV	Vord: 0 <u>s CE De</u> Mode>	viceN	

**5.** Click OK to save the configuration.

You are prompted to download the I/O configuration to the 1756-DNB module.



**6.** Select Yes to download the configuration.

# Map the 1756-DNB I/O to the PanelView Plus Scanlist

You are now ready to add the I/O configuration in the 1756-DNB module to the scanlist of the PanelView Plus terminal. The PanelView Plus can then scan this data.

**1.** In the Network dialog, double-click the PanelView Plus/PanelView Plus CE DeviceNet icon.



The PanelView Plus/PanelView Plus CE DeviceNet dialog opens.

General       Module       Scanlist       Input       Dutput       ADR       Summary         PV Plus/ PV Plus CE DeviceNet         Name:       PV Plus/ PV Plus CE DeviceNet         Description:	Plus/PV Plus	CE DeviceNet	?)
PV Plus/ PV Plus CE DeviceNet         Name:       PV Plus/ PV Plus CE DeviceNet         Description:	eral   Module	Scanlist Input Output ADR Summary	
Name:     PV Plus/ PV Plus CE DeviceNet       Description:	PV P	lus/ PV Plus CE DeviceNet	
Description:         Address:       2         Device Identity [Primary]         Vendor:       Rockwell Automation - Allen-Bradley [1]         Type:       Communication Adapter [12]	∐ame:	PV Plus/ PV Plus CE DeviceNet	
Address: 2	escription:	[	_
Type: Communication Adapter [12]	\dd <u>r</u> ess: )evice Identity Vendor:	2 Primary ] Rock well Automation - Allen-Bradley [1]	_
Type. [commanication Adapter [12]	Tupe:	Communication Adapter [12]	_
Device: PV Plus/PV Plus CE DeviceNet	Device:	PV Plus/PV Plus CE DeviceNet	_
Catalog: 2711P.BN10H	Catalog:	2711P.BN10H	-5
Bavision 2016	Bauisian		
	THE WISION.		
OK Cancel Apple Help		OK Cancel Apply H	eln

**2.** Select the Scanlist tab to view and edit the PanelView Plus scanlist.

The 1756-DNB module appears as an available device. This means you can add it to the Scanlist.

	out   Output   ADR   Summary	
Availa <u>b</u> le Devices:	<u>S</u> canlist:	
01, 1756-DNB		
	<	
	>>1	
	<u> </u>	
Automap on Add	Node Active	
Automap on Add	Node Agtive     Electronic Key:     Device Type	
Automap on Add     Upload from Scanner     Download to Scanner	Node Agtive     Electronic Key:     Device Lype     Vendor     Product Code	
Automap on Add     Upload from Scanner     Download to Scanner	Node Agtive     Electronic Key:     Device Lype     Vendor     Eroduct Code     Major Eevision	
Automap on Add     Upload from Scanner     Download to Scanner     Edit 1/0 Parameters	Node Agtive     Electronic Key:     Device Type     Vendor     Product Code     Major Eevision     Migor    or big	her

**3.** Select the 1756-DNB device and click > to add the device to the Scanlist.

eneral Module Scanlist Inpu	ut Output ADR Summary
Available Devices:	Scanlist:
Automap on Add     Upload from Scanner      Download to Scanner	Vode Agtive Electronic Key. V Device Type V dendor V Product Code

The Automap on Add checkbox is checked. When you add the device to the Scanlist, the slave inputs and outputs are automatically added to the input and output image tables.



If the Automap on Add checkbox was not checked, you would need to manually map the data on the Input tab.

**4.** Select the Input tab to verify that the 1756-DNB data is mapped to the PanelView Plus input image file.

Node	Δ.	Туре	Size	Map		AutoMan
m 🚺 01, 1	756-DNB	Cyclic	4	2.0		Rath
02, <	Slave Mode>	Cyclic	4	0.0		<u>U</u> nmap
						Advanced
•					•	Options
M <u>e</u> mory:	Image File	•	<u>S</u> tart	Word:	0	<u>.</u>
Bits 15 - 0	15 14 13 12	2 11 10	98	76	5 4 3	3 2 1 0 🔺
0		02	2, <slav< td=""><td>/e Mode</td><td>&gt;</td><td></td></slav<>	/e Mode	>	
1	j.	02	2, <slav< td=""><td>/e Mode</td><td>&gt;</td><td></td></slav<>	/e Mode	>	
2			01, 175	56-DNB		
3			01, 175	56-DNB		
4						
0						
B						

The DINT slave output (Scanner\_Output) created in RSLinx Enterprise software resides in the first 4 bytes of the PanelView Plus Input table. The Input tab shows the data mapped correctly.

**5.** Select the Output tab to verify that the 1756-DNB data is mapped to the PanelView Plus output image file.

neral] Mo		
nerar I Mu		n   Summary
Node	🛆 Type Size Map	AutoMap
01,	1756-DNB Cyclic 4 2.0	
02,	<slave mode=""> Cyclic 4 0.0</slave>	Unmap
		A <u>d</u> vanced
4		Dptions
d <u>e</u> mory:	Image File <u>S</u> tart Word:	0 ÷
Bits 15 - 0	15 14 13 12 11 10 9 8 7 6	5 4 3 2 1 0 4
0	02, <slave mode<="" td=""><td>&gt;</td></slave>	>
1	02, <slave mode<="" td=""><td>&gt;</td></slave>	>
2	01, 1756-DNB	
3	01, 1756-DNB	
4 5	-	
6		
7		
8		
Γ	OK Connel	6 I I

The DINT slave input (Scanner\_Input) created in RSLinx Enterprise software resides in the first 4 bytes of the PanelView Plus output table. The Output tab shows the data mapped correctly.



If the Automap on Add checkbox was not checked, you would need to manually map the data on the Output tab.

6. Click OK.

You are prompted to download the changes to the PanelView Plus terminal.



7. Click Yes to download the configuration.

The PanelView Plus is now configured to scan the slave I/O data in the 1756-DNB DeviceNet module.

### Summary

The scanlists are now configured for both the 1756-DNB DeviceNet module and the PanelView Plus terminal.

**IMPORTANT** To change the scanlist for a device on the network, you must place the device in Idle mode before downloading the changes. For the PanelView Plus, you can load the application but not run it. For the 1756-DNB module, put the ControlLogix processor in Program mode.

You are now ready to put each device in Run mode.

- For the PanelView Plus, run the Machine Edition .mer application in the terminal.
- For the 1756-DNB module, enable the run bit in the ladder program using RSLogix 5000 software.

# Use RSLogix 5000 Software

During the first part of the example configuration in Chapter 2:

- you added the 1756-DNB I/O configuration to the 1756-L63 controller tags database using RSLogix 5000 software.
- you then set the run bit Local:2:O.CommandRegister.Run in the output command register

You did this to enable communications between the PanelView Plus and the 1756-DNB DeviceNet module.

In the Configure RSNetWorx for DeviceNet software section of this chapter, you put the processor in Program mode to clear the Command Register run bit. Because the 1756-DNB was in Idle mode, you were able to download the scanlist to the 1756-DNB module. You can now put 1756-DNB module in Run mode. In the 1756-DNB command register set the run bit Local:2:O.CommandRegister.Run.

### Summary

The PanelView Plus is now ready to operate as a scanner on the DeviceNet network. The terminal can scan the configured slave I/O data from the 1756-DNB module.

# **Restore Configuration to Local Tab**

In some cases, it may be necessary to edit an application after the DeviceNet configuration on the Local tab has changed or has been moved to a different computer. The RSLinx Enterprise Local tab configuration stays resident on the desktop computer, regardless of which application is being edited.

#### The following procedure shows how to copy the Target tab configuration for an application to the Local tab to allow for browsing for tags.

**IMPORTANT** This procedure will overwrite all driver configurations on the Local tab with all of the driver configurations that were on the Target tab when the application was backed up.

Make sure that the DeviceNet configuration is saved, make sure the application is backed up using Application Manager.

When you are ready to resume editing, restore the application using the Application Manager. This will create an XML file with the restored I/O configuration. For RSView Studio software, you must complete the following steps.

- 1. Close RSView Studio software.
- **2.** Disable the RSLinx Enterprise service within the Service Control Manager (Control Panel>Administrative Tools>Services).
- 3. Double-click RSLinx Enterprise.
- **4.** Make a backup copy of the current RSLinxNG.xml file in C:\Documents and Settings\All Users\Application Data\Rockwell\RSLinx Enterprise.
- **5.** Rename the Restored\_restoredAppNAme\_RSLinxNG.xml to RSLinxNG.xml.
- 6. Re-enable and restart the RSLinx Enterprise software.

# Copy Configuration to Local Tab

To allow browsing for tags, open the Communication Setup under the RSLinx Enterprise tree and apply the shortcut to the DeviceNet driver on the Local tab. If changes are made to the driver configuration on the Local tab, be sure to copy this configuration to the Target tab using the Copy button on the Communication Setup dialog.
#### Numerics

**2711P-RN10C** 9 **2711P-RN10H** 9

# A

alias input 21, 51 output 25

## B

browsing for 58

## C

communications 16, 49 scanner 49 slave device 16 configuration copy 71 network 15 PanelView Plus 33 restore 71 RSLinx 29 RSLogix 5000 69 RSNetWorx 31, 60 scanner 49, 50, 54 slave 23 slave device 15 slave inputs 18 slave outputs 18

# D

DeviceNet module 9 2711P-RN10C 9 2711P-RN10H 9

# I

I/O 36 I/O mapping 36, 40 I/O status indicators 11 image table 36 input alias 21, 51 inputs 18

### Μ

MOD 12 module status indicators 11

#### Ν

NET 13 network 15 network configuration 15 network status indicators 11

### 0

output alias 25 outputs 18

### P

PanelView Plus 1756-DNB 40 configuration 33 I/O mapping 36 1756-DNB 40 image table 36 slave I/O 33 protocol 9

#### R

RSLinx 29 configuration 29 RSLogix 5000 44, 69 RSNetWorx 31, 60 configuration 31

### S

scanlist 40 scanner 54 configuration 54 input data 50 output data 54 shortcut 26 slave device 15 communications 16 configuration 15 slave outputs configuration 18 status indicators 1/0 11 module (MOD) 12 network (NET) 13 supported controllers 9

#### Т

tags 28, 58 browsing for 28

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For an additional level of technical phone support for installation, configuration and troubleshooting, we offer TechConnect Support programs. For more information, contact your local distributor or Rockwell Automation representative, or visit http://support.rockwellautomation.com.

#### Installation Assistance

If you experience a problem with a hardware module within the first 24 hours of installation, please review the information that's contained in this manual. You can also contact a special Customer Support number for initial help in getting your module up and running:

United States	1.440.646.3223 Monday – Friday, 8am – 5pm EST
Outside United States	Please contact your local Rockwell Automation representative for any technical support issues.

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