



# DeviceNet Modules

Catalog Numbers 1756-DNB, 1769-ADN, 1769-SDN



## 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 <http://www.rockwellautomation.com/literature/>) 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.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

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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.



**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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### IMPORTANT

Identifies information that is critical for successful application and understanding of the product.

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Allen-Bradley, Compact I/O, CompactLogix, ControlLogix, FlexLogix, Logix5000, MicroLogix, Rockwell Automation, Rockwell Software, RSLinx, RSLinx Classic, RSLogix 5000, RSNetWorx for DeviceNet, and TechConnect are trademarks of Rockwell Automation, Inc.

Trademarks not belonging to Rockwell Automation are property of their respective companies.

This manual contains new and updated information. Changes throughout this revision are marked by change bars, as shown to the right of this paragraph.

### **New and Updated Information**

This table contains the changes made to this revision.

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This manual describes how to install and start DeviceNet module systems with Logix5000™ controllers.

Use this manual if you program applications that use an EtherNet/IP network with one of these Logix5000 controllers:

- CompactLogix™ controller
- ControlLogix® controller

You should also understand the following:

- Networking concepts
- How to use RSLogix™ 5000 software
- How to use RSLinx® Classic programming software

## Additional Resources

For more information on the products included in this publication, use the publications listed in this table.

Resource	Description
DeviceNet Network Configuration User Manual, publication <a href="#">DNET-UM004</a>	Provides details about how to use DeviceNet communication modules with Logix5000 controllers and communicate with other devices on the DeviceNet network.
Compact I/O 1769-ADN DeviceNet Adapter User Manual, publication <a href="#">1769-UM001</a>	Provides information about installing, configuring, and troubleshooting the 1769-ADN DeviceNet adapter.
Compact I/O DeviceNet Scanner Module User Manual, publication <a href="#">1769-UM009</a>	Provides a quick start and describes how to install, configure, operate, and troubleshoot the 1769-SDN scanner module.
DeviceNet Media Design Installation Guide, publication <a href="#">DNET-UM072</a>	Provides information about how to design, install, and troubleshoot a DeviceNet cable system.

**Notes:**

# Install a 1756 DeviceNet Communication Module

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## ATTENTION: Environment and Enclosure

This equipment is intended for use in a Pollution Degree 2 industrial environment, in overvoltage Category II applications (as defined in IEC 60664-1), at altitudes up to 2000 m (6562 ft) without derating.

This equipment is considered Group 1, Class A industrial equipment according to IEC/CISPR 11. Without appropriate precautions, there may be difficulties with electromagnetic compatibility in residential and other environments due to conducted and radiated disturbances.

This equipment is supplied as open-type equipment. It must be mounted within an enclosure that is suitably designed for those specific environmental conditions that will be present and appropriately designed to prevent personal injury resulting from accessibility to live parts. The enclosure must have suitable flame-retardant properties to prevent or minimize the spread of flame, complying with a flame spread rating of 5VA or be approved for the application if non-metallic. The interior of the enclosure must be accessible only by the use of a tool. Subsequent sections of this publication may contain additional information regarding specific enclosure type ratings that are required to comply with certain product safety certifications.

In addition to this publication, see the following:

- Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#), for additional installation requirements
- NEMA Standard 250 and IEC 60529, as applicable, for explanations of the degrees of protection provided by enclosures

**North American Hazardous Location Approval**

<b>The following information applies when operating this equipment in hazardous locations.</b>	<b>Informations sur l'utilisation de cet équipement en environnements dangereux.</b>
<p>Products marked "CL I, DIV 2, GP A, B, C, D" are suitable for use in Class I Division 2 Groups A, B, C, D, Hazardous Locations and nonhazardous locations only. Each product is supplied with markings on the rating nameplate indicating the hazardous location temperature code. When combining products within a system, the most adverse temperature code (lowest "T" number) may be used to help determine the overall temperature code of the system. Combinations of equipment in your system are subject to investigation by the local Authority Having Jurisdiction at the time of installation.</p>	<p>Les produits marqués "CL I, DIV 2, GP A, B, C, D" ne conviennent qu'à une utilisation en environnements de Classe I Division 2 Groupes A, B, C, D dangereux et non dangereux. Chaque produit est livré avec des marquages sur sa plaque d'identification qui indiquent le code de température pour les environnements dangereux. Lorsque plusieurs produits sont combinés dans un système, le code de température le plus défavorable (code de température le plus faible) peut être utilisé pour déterminer le code de température global du système. Les combinaisons d'équipements dans le système sont sujettes à inspection par les autorités locales qualifiées au moment de l'installation.</p>

**WARNING: EXPLOSION HAZARD**

- Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous.
- Do not disconnect connections to this equipment unless power has been removed or the area is known to be nonhazardous. Secure any external connections that mate to this equipment by using screws, sliding latches, threaded connectors, or other means provided with this product.
- Substitution of components may impair suitability for Class I, Division 2.
- If this product contains batteries, they must only be changed in an area known to be nonhazardous.

**AVERTISSEMENT: RISQUE D'EXPLOSION**

- Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher l'équipement.
- Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher les connecteurs. Fixer tous les connecteurs externes reliés à cet équipement à l'aide de vis, loquets coulissants, connecteurs filetés ou autres moyens fournis avec ce produit.
- La substitution de composants peut rendre cet équipement inadapté à une utilisation en environnement de Classe I, Division 2.
- S'assurer que l'environnement est classé non dangereux avant de changer les piles.



**WARNING:** If you connect or disconnect the communication cable with power applied to this module or any device on the network, an electrical arc can occur. This could cause an explosion in hazardous location installations.

Be sure that power is removed or the area is nonhazardous before proceeding.

**European Hazardous Location Approval****The following applies when the product bears the Ex Marking:**

This equipment is intended for use in potentially explosive atmospheres as defined by European Union Directive 94/9/EC and has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of Category 3 equipment intended for use in Zone 2 potentially explosive atmospheres, given in Annex II to this Directive.

Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-15 and EN 60079-0.

**WARNING:**

- This equipment must be installed in an enclosure providing at least IP54 protection when applied in Zone 2 environments.
- This equipment shall be used within its specified ratings defined by Rockwell Automation.
- Provision shall be made to prevent the rated voltage from being exceeded by transient disturbances of more than 40% when applied in Zone 2 environments.
- This equipment must be used only with ATEX certified Rockwell Automation backplanes.
- Secure any external connections that mate to this equipment by using screws, sliding latches, threaded connectors, or other means provided with this product.
- Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous.



**ATTENTION:** This equipment is not resistant to sunlight or other sources of UV radiation.



#### **ATTENTION: Prevent Electrostatic Discharge**

This equipment is sensitive to electrostatic discharge, which can cause internal damage and affect normal operation. Follow these guidelines when you handle this equipment:

- Touch a grounded object to discharge potential static.
- Wear an approved grounding wriststrap.
- Do not touch connectors or pins on component boards.
- Do not touch circuit components inside the equipment.
- Use a static-safe workstation, if available.
- Store the equipment in appropriate static-safe packaging when not in use.

## Installation Summary

To install a communication module in a 1756 ControlLogix chassis, complete these steps.

1. [Determine Module Slot Location](#).
2. [Set the Communication Rate](#).
3. [Set the Node Address](#).
4. [Install the Module](#).
5. [Connect the Module to a DeviceNet Network](#).
6. [Download the Add-on Profile](#).
7. [Connect to the Module via the USB Port](#).
8. [Apply Chassis Power and Check Status Indicators](#).

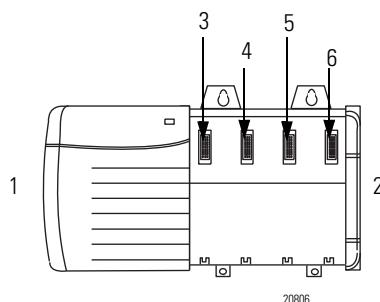
## Grounding Considerations

Refer to these publications for grounding guidelines:

- DeviceNet Media Design and Installation Guide, publication [DNET-UM072](#)
- Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#)

## Determine Module Slot Location

Install the communication module in any slot in the ControlLogix chassis. You can install multiple communication modules in the same chassis. This example shows chassis slot numbering in a 4-slot chassis. Slot 0 is the first slot and is always the leftmost slot in the rack.



Item	Description
1	Power supply
2	Chassis
3	Slot 0
4	Slot 1
5	Slot 2
6	Slot 3

## Set the Communication Rate

The 1756-DNB scanner module supports the following DeviceNet network communication rates:

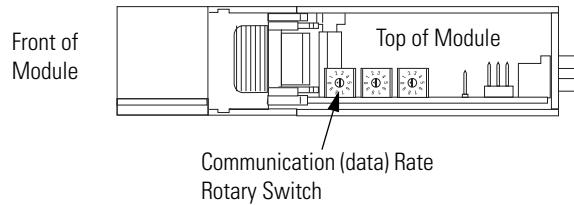
- 125 Kbps (default)
- 250 Kbps
- 500 Kbps



**ATTENTION:** Do not change the communication rate on an active network. Unpredictable operation may result. In addition, the new communication rate does not take effect until you cycle power to the 1756-DNB scanner module.

Change the communication rate by setting the rotary switch or commissioning the 1756-DNB scanner module in RSNetWorx for DeviceNet software.

Use the switch to select a specific communication rate. When the switch is set to 3...9 (except for 888), you can configure the communication rate with RSNetWorx for DeviceNet software. When all three switches are set to 8, the 1756-DNB scanner module will reset to factory default settings at powerup.

**Figure 1 - Communication Rate Rotary Switch****Table 1 - Switch Settings and Communication Rate**

Switch Setting	Communication Rate
0	125 Kbps
1	250 Kbps
2	500 Kbps
8	When all three switches are set to 8, this resets the 1756-DNB scanner module to factory default settings. Do not use for normal operation.
All other values	Select the communication rate with RSNetWorx for DeviceNet software.

## Set the Rotary Switch

Use the communication (data) rate rotary switch to change the communication rate.

1. If the module is removed from the chassis, be sure that power is removed or the area is nonhazardous before proceeding.
2. Move the rotary switch to the desired position.
3. If necessary, reinstall the module into the chassis.

## Use RSNetWorx for DeviceNet Software

Follow this procedure to use RSNetWorx for DeviceNet software to set the communication rate.

1. In RSNetWorx for DeviceNet software, select the 1756-DNB scanner module.
2. From the Tools menu, choose Node Commissioning.
3. Browse to the DeviceNet network for the 1756-DNB scanner module you want to commission.
4. Select the 1756-DNB scanner module you want to commission.

5. From the Data Rate pull-down menu, choose the communication (data) rate.
6. Click Apply.
7. Cycle power to the 1756-DNB scanner module.

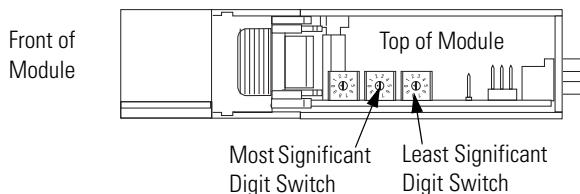
## Set the Node Address

The 1756-DNB scanner module supports DeviceNet node addresses 00...63. The factory default setting is node address 63.

Change the node address by setting the rotary switches or commissioning the 1756-DNB scanner module in RSNetWorx for DeviceNet software.

Use the switches to select any network address from 00...63. When the switches are set outside of this range (except for 888), you can configure the node address with RSNetWorx for DeviceNet software. When all 3 switches are set to 8, the 1756-DNB scanner module will reset to factory default settings at powerup.

**Figure 2 - Node Address Rotary Switch**



**Table 2 - Switch Settings**

Switch Setting	Node Address
0...63	The DeviceNet node address is 00...63.
888	When all 3 switches are set to 8, this resets the 1756-DNB scanner module to factory default settings. Do not use for normal operation.
All other values	Select the node address with RSNetWorx for DeviceNet software.

## Set the Rotary Switches

Use the node address rotary switches to change the DeviceNet node address for the 1756-DNB scanner module.

1. If the module is removed from the chassis, be sure that power is removed or the area is nonhazardous before proceeding.
2. Move the rotary switches to the desired position.
3. If necessary, reinstall the module into the chassis.

## Use RSNetWorx for DeviceNet Software

Follow this procedure to use RSNetWorx for DeviceNet software to set the node address.

1. In RSNetWorx for DeviceNet software, select the 1756-DNB scanner module.
2. From the Tools menu, choose Node Commissioning.
3. Browse to the DeviceNet network for the 1756-DNB scanner module you want to commission.
4. Select the 1756-DNB scanner module you want to commission.
5. From the Address pull-down menu, choose the node address.
6. Click Apply.

## Restore the Factory Default Settings

The out-of-box reset will clear the scan list, including ADR configuration recovery files, and return all software setting attributes to their default values.

Follow this procedure to restore the factory-default communication rate and node address.

1. Set the switches to 888.

**IMPORTANT** Do not use the 888 switch setting during normal module operation.

2. Restore power to the module.

When the out-of-box reset is complete, the module status display repeatedly scrolls the message Reset Complete - Change Switch Settings. During this time, the module does not respond to communication from any port, including the backplane, DeviceNet connector, or USB port.

3. After the module resets, perform these steps.
  - a. Set the switches to the desired position.
  - b. Restore power to the module.

## Install the Module

To install the module, follow this procedure.

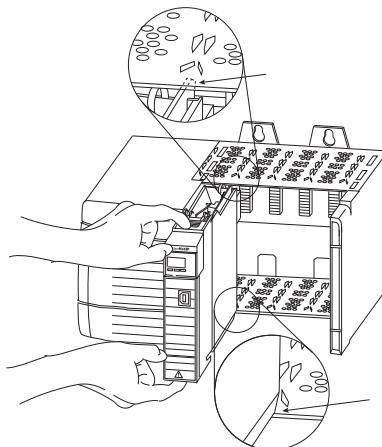


**WARNING:** When you insert or remove the module while backplane power is on, an electrical arc can occur. This could cause an explosion in hazardous location installations.

Be sure that power is removed or the area is nonhazardous before proceeding.

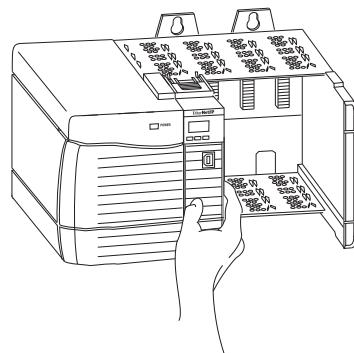
Repeated electrical arcing causes excessive wear to contacts on both the module and its mating connector. Worn contacts may create electrical resistance that can affect module operation.

1. Align the circuit board with top and bottom guides in the chassis.



31588-M

2. Slide the module into the chassis, making sure the module backplane connector properly connects to the chassis backplane and noting that the module is properly installed when it is flush with the power supply or other installed modules.



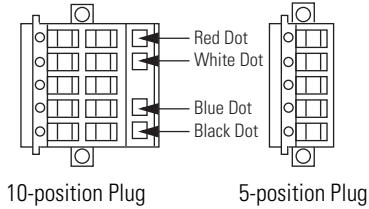
31589-M

## Connect the Module to a DeviceNet Network

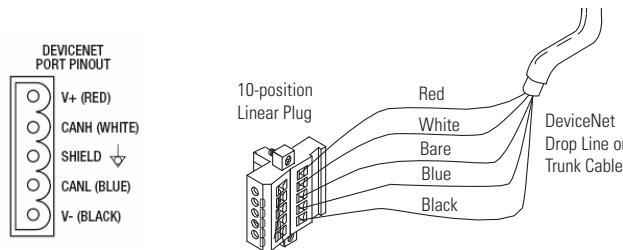
Use an open-style 5- or 10-position linear plug to connect to the DeviceNet network. An open-style 10-position linear plug is provided with your module.

**IMPORTANT** For detailed DeviceNet connection information, see the DeviceNet Media Design and Installation Guide, publication [DNET-UM072](#).  
Also see the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

Wire the connector according to the following illustrations.



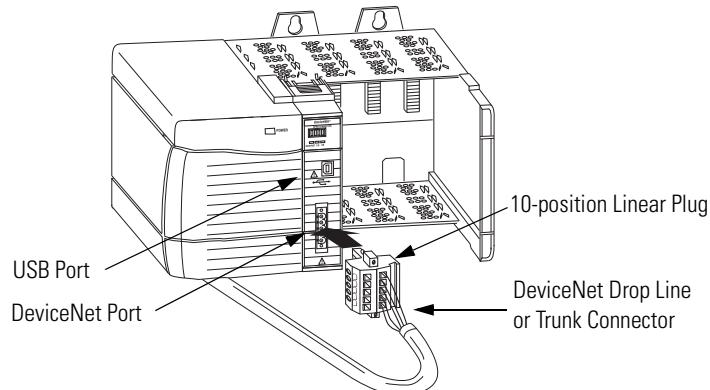
10-position Plug      5-position Plug



**WARNING:** If you connect or disconnect the DeviceNet connector with power applied to this module or any device on the network, an electrical arc can occur. This could cause an explosion in hazardous location installations.

Be sure that power is removed or the area is nonhazardous before proceeding.

Attach the connector to the module's DeviceNet port as shown below. Tighten the screws on the connector as needed.



## Download the Add-on Profile

If you are using a later firmware revision for the communication module than recognized in the most current version of RSLogix 5000 software, you may need to download the Add-on Profile (AOP) for the communication module so it can be recognized in the Controller Organizer.

1. Locate the module AOP at <http://www.rockwellautomation.com/support/controlflash/LogixProfiler>.

**IMPORTANT** You need a Rockwell Automation MySupport account to download the AOP. If you do not have one, follow the steps on the MySupport website to obtain an account.

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2. Click the file to download it.
3. Enter your RSLogix 5000 software serial number and click Qualify for Update.
4. Download and extract the zipped files to a temporary directory.
5. Shut down any instances of RSLogix 5000 software that are currently running.
6. In the temporary directory, double-click the MPSetup.exe file and follow the onscreen instructions to install the AOP.

## Connect to the Module via the USB Port

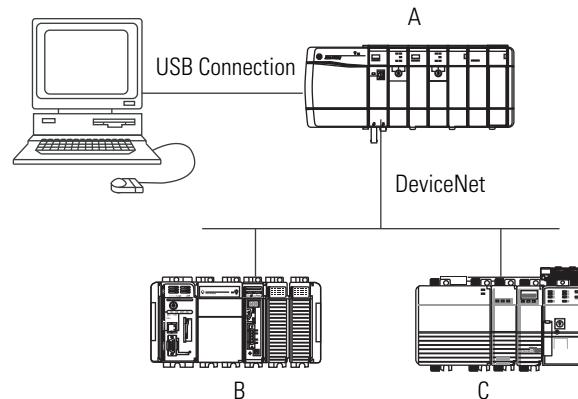
The module has a USB device port that uses a series B receptacle. Connecting to the module via the USB port requires these steps:

1. [Set Up the Hardware](#).
2. [Configure the Module via the USB Port](#).
3. [Load Firmware through a USB Port](#).

## Set Up the Hardware

In this example, the controller in the local chassis produces a tag that the Logix5000 controller in the remote chassis consumes. The local controller can also send a MSG instruction to the remote controller.

**Figure 3 - Sharing Data and Transferring Messages**



Item	Description
A	Local chassis containing a Logix5000 controller and a communication module with a USB port
B	Remote chassis containing a Logix5000 controller with an EtherNet/IP connection
C	Remote chassis containing a Logix5000 controller

## Configure the Module via the USB Port

To use the module's USB port, you must have RSLinx Classic software, version 2.51 or later, installed on your computer. Use a USB cable to connect your computer to the USB port. This connection lets you download programs to controllers and configure other devices, which are accessible by the module, directly from your computer.



**WARNING:** Do not use the USB port in hazardous locations.



**ATTENTION:** The USB port is intended for temporary local programming purposes only and is not intended for permanent connection. The USB cable is not to exceed 3.0 m (9.84 ft) and must not contain hubs.

To configure RSLinx Classic software to use a USB port, you need to first set up a USB driver. To set up a USB driver, perform this procedure.

1. Connect your EtherNet/IP module to your computer by installing a USB cable in your module's USB port.

The RSLinx Found New Hardware Wizard dialog box appears.

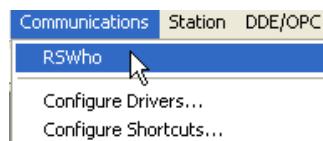


2. Click Install the Software Automatically.
3. Click Next.

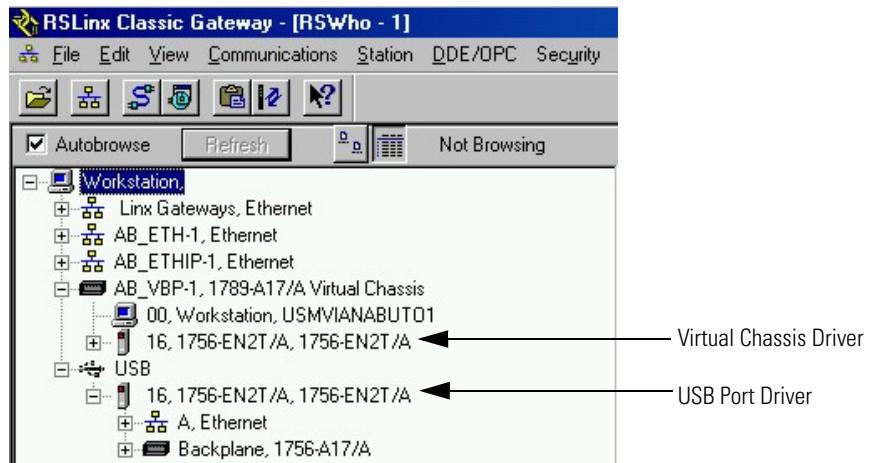
These RSLinx dialog boxes appear consecutively.



4. Click Finish to set up your USB driver.
5. In RSLinx software, from the Communications pull-down menu, choose RSWho.



The RSLinx Workstation organizer appears.



Your 1756-EN2T module appears under two different drivers, a virtual chassis and the USB port.

## Load Firmware through a USB Port

**IMPORTANT**

Do not simultaneously load firmware for more than one module at a time through a USB port. If you do, one or more of the firmware loads may fail in the middle of the upgrade.

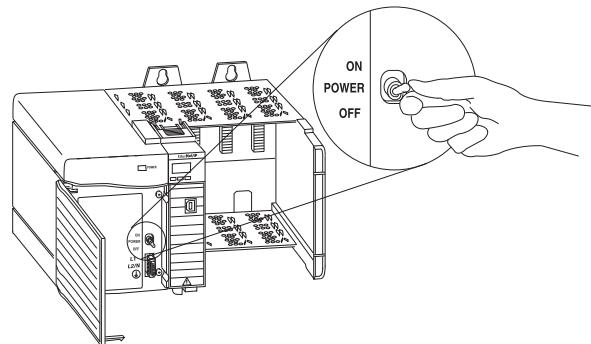
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## Apply Chassis Power and Check Status Indicators

Before you apply power, you must install and connect a ControlLogix chassis and power supply.

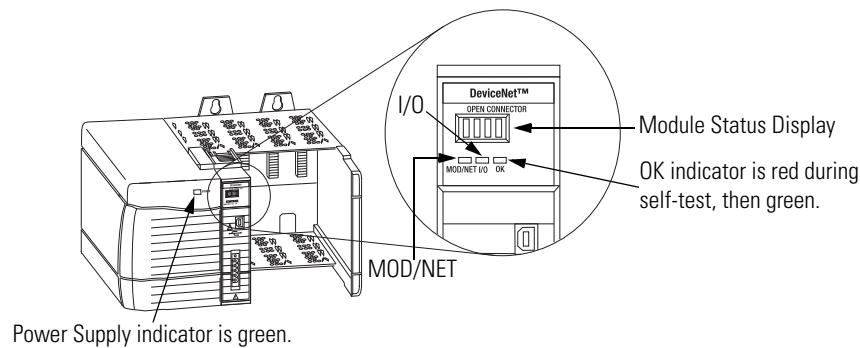
To apply power, follow these steps.

1. Apply chassis power as shown.



2. Check the power supply and status indicators to determine that the power supply and module are operating properly.

The module status display should cycle through the following states: TEST - PASS - OK - REV *x.x*, where *x.x* is the module's firmware revision.



## Install or Remove the Module Under Power

You can install or remove this module while chassis power is applied.



**WARNING:** When you insert or remove the module while backplane power is on, an electrical arc can occur. This could cause an explosion in hazardous location installations.

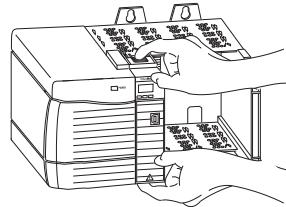
Be sure that power is removed or the area is nonhazardous before proceeding.

Repeated electrical arcing causes excessive wear to contacts on both the module and its mating connector. Worn contacts may create electrical resistance that can affect module operation.

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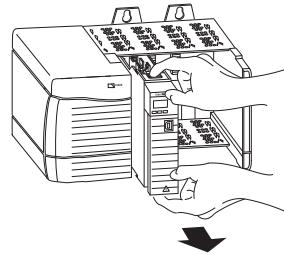
To remove or replace the module, use this procedure.

1. Push on the upper and lower module tabs to disengage them.



31590-M

2. Slide the module out of the chassis.



31591-M

**IMPORTANT** If you want to replace an existing module with an identical one, and you want to resume identical system operation, you must install the new module in the same slot.

## Install a 1769 DeviceNet Communication Module

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### ATTENTION: Environment and Enclosure

This equipment is intended for use in a Pollution Degree 2 industrial environment, in overvoltage Category II applications (as defined in IEC 60664-1), at altitudes up to 2000 m (6562 ft) without derating.

This equipment is considered Group 1, Class A industrial equipment according to IEC/CISPR 11. Without appropriate precautions, there may be difficulties with electromagnetic compatibility in residential and other environments due to conducted and radiated disturbances.

This equipment is supplied as open-type equipment. It must be mounted within an enclosure that is suitably designed for those specific environmental conditions that will be present and appropriately designed to prevent personal injury resulting from accessibility to live parts. The enclosure must have suitable flame-retardant properties to prevent or minimize the spread of flame, complying with a flame spread rating of 5VA or be approved for the application if nonmetallic. The interior of the enclosure must be accessible only by the use of a tool. Subsequent sections of this publication may contain additional information regarding specific enclosure type ratings that are required to comply with certain product safety certifications.

In addition to this publication, see the following:

- Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#), for additional installation requirements
- NEMA Standard 250 and IEC 60529, as applicable, for explanations of the degrees of protection provided by enclosures

**North American Hazardous Location Approval**

<b>The following information applies when operating this equipment in hazardous locations.</b>	<b>Informations sur l'utilisation de cet équipement en environnements dangereux.</b>
<p>Products marked "CL I, DIV 2, GP A, B, C, D" are suitable for use in Class I Division 2 Groups A, B, C, D, Hazardous Locations and nonhazardous locations only. Each product is supplied with markings on the rating nameplate indicating the hazardous location temperature code. When combining products within a system, the most adverse temperature code (lowest "T" number) may be used to help determine the overall temperature code of the system. Combinations of equipment in your system are subject to investigation by the local Authority Having Jurisdiction at the time of installation.</p>	<p>Les produits marqués "CL I, DIV 2, GP A, B, C, D" ne conviennent qu'à une utilisation en environnements de Classe I Division 2 Groupes A, B, C, D dangereux et non dangereux. Chaque produit est livré avec des marquages sur sa plaque d'identification qui indiquent le code de température pour les environnements dangereux. Lorsque plusieurs produits sont combinés dans un système, le code de température le plus défavorable (code de température le plus faible) peut être utilisé pour déterminer le code de température global du système. Les combinaisons d'équipements dans le système sont sujettes à inspection par les autorités locales qualifiées au moment de l'installation.</p>

**WARNING: EXPLOSION HAZARD**

- Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous.
- Do not disconnect connections to this equipment unless power has been removed or the area is known to be nonhazardous. Secure any external connections that mate to this equipment by using screws, sliding latches, threaded connectors, or other means provided with this product.
- Substitution of components may impair suitability for Class I, Division 2.
- If this product contains batteries, they must only be changed in an area known to be nonhazardous.

**WARNING: RISQUE D'EXPLOSION**

- Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher l'équipement.
- Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher les connecteurs. Fixer tous les connecteurs externes reliés à cet équipement à l'aide de vis, loquets coulissants, connecteurs filetés ou autres moyens fournis avec ce produit.
- La substitution de composants peut rendre cet équipement inadapté à une utilisation en environnement de Classe I, Division 2.
- S'assurer que l'environnement est classé non dangereux avant de changer les piles.

**WARNING: An electrical arc can occur if you do the following:**

- Insert or remove the module while backplane power is on
- Connect or disconnect the communication cable with power applied to this module or any device on the network
- Change switch settings while power is on

These actions could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding. Remove power before removing or inserting this module.

**ATTENTION: Prevent Electrostatic Discharge**

This equipment is sensitive to electrostatic discharge, which can cause internal damage and affect normal operation. Follow these guidelines when you handle this equipment:

- Touch a grounded object to discharge potential static.
- Wear an approved grounding wriststrap.
- Do not touch connectors or pins on component boards.
- Do not touch circuit components inside the equipment.
- Use a static-safe workstation, if available.
- Store the equipment in appropriate static-safe packaging when not in use.

## Installation Summary

To install a communication module in a 1769 ControlLogix chassis, complete these steps.

1. [System Assembly](#).
2. [Panel Mounting](#).

or

3. [DIN Rail Mounting](#).
4. [Connect the Module to a DeviceNet Network](#).
5. [Set the Node Address](#).
6. [Download the Add-on Profile](#).
7. [Apply Chassis Power and Check Status Indicators](#).
8. [Apply Chassis Power and Check Status Indicators](#).

## Grounding Considerations

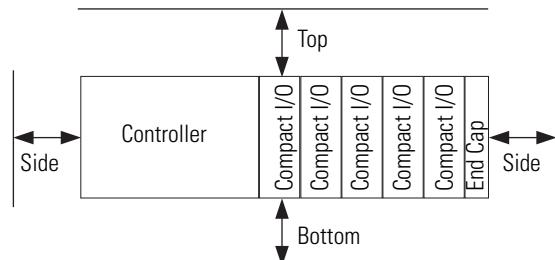


### ATTENTION:

- The grounding screw on the front of the scanner must be connected to a suitable ground source when operating in electrically noisy environments. Use a 2.08 mm<sup>2</sup> (14 AWG) wire to make this connection.
- This product is grounded through the DIN rail to chassis ground. Use zinc plated yellow-chromate steel DIN rail to assure proper grounding. The use of other DIN rail materials (for example, aluminum or plastic) that can corrode, oxidize, or are poor conductors, can result in improper or intermittent grounding. Secure DIN rail to mounting surface approximately every 200 mm (7.8 in.) and use end-anchors appropriately.
- This product is intended to be mounted to a well-grounded mounting surface, such as a metal panel. Additional grounding connections from the scanner's mounting tabs or DIN rail (if used) are not required unless the mounting surface cannot be grounded. Refer to the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#), for additional information.

## Minimum Spacing

Maintain spacing from enclosure walls, wireways, and adjacent equipment. Allow 50 mm (2 in.) of space on all sides for adequate ventilation.

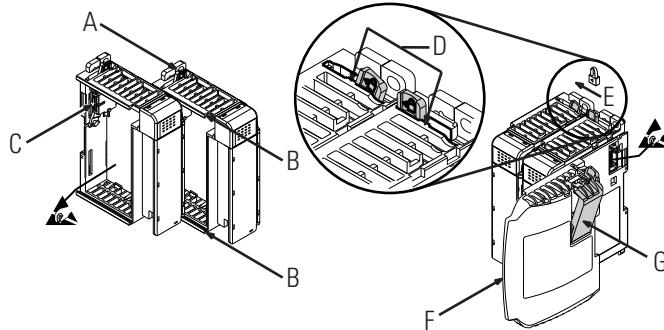


Allow at least 110 mm (4.33 in.) of enclosure depth to accommodate the module and the DeviceNet connector.

## System Assembly

The module can be attached to an adjacent controller, power supply, or I/O module.

Follow these steps to assemble the Compact I/O system.



1. Disconnect power.
2. Check that the bus lever of the module (A) is in the unlocked (fully right) position.
3. Use the upper and lower tongue-and-groove slots (B) to secure the modules together.
4. Move the module back along the tongue-and-groove slots until the bus connectors (C) line up with each other.
5. Use your fingers or a small screwdriver to push the bus lever back slightly to clear the positioning tab (D).
6. Move the module's bus lever fully to the left (E) until it clicks.

Be sure it is locked firmly in place.



**ATTENTION:** When attaching I/O modules, it is very important that the bus connectors are securely locked together to make a proper electrical connection.

7. Attach an end cap terminator (F) to the last module in the system by using the tongue-and-groove slots as before.
8. Lock the end cap bus terminator (G).

**IMPORTANT** A 1769-ECR or 1769-ECL right or left end cap must be used to terminate the end of the serial communication bus.

## Panel Mounting



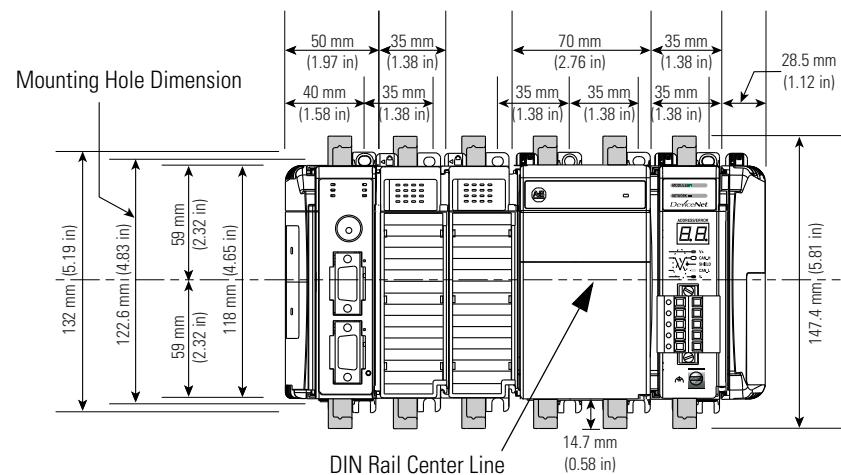
**ATTENTION:** During panel or DIN rail mounting of all devices, be sure that all debris, such as metal chips and wire strands, is kept from falling into the module. Debris that falls into the module could cause damage on powerup.

Mount the module to a panel by using two screws per module. Use M4 or #8 panhead screws. Mounting screws are required on every module.

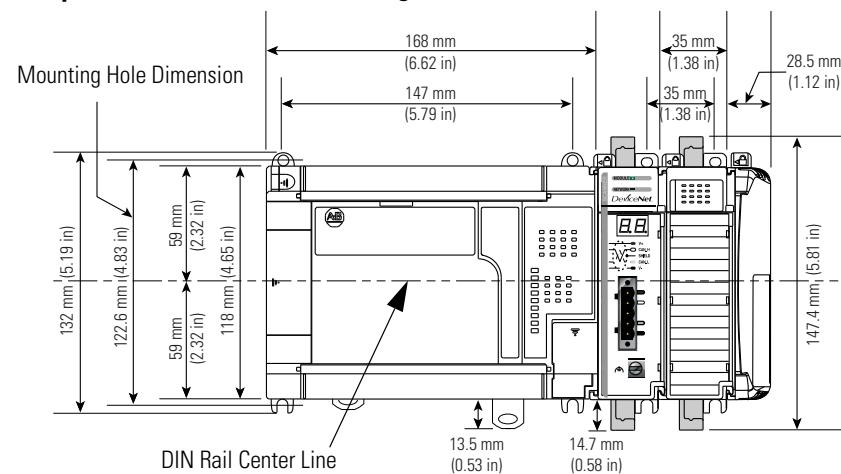
### Panel Mounting Using the Dimensional Drawing

Hole spacing tolerance is  $\pm 0.04$  mm (0.016 in.).

#### Compact I/O Modules with CompactLogix Controller and Power Supply



#### Compact I/O Modules with MicroLogix 1500 Base Unit and Processor



## Panel Mounting Procedure Using Modules as a Template

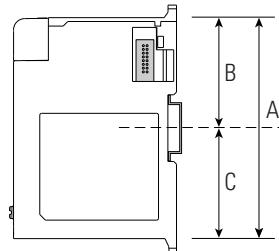
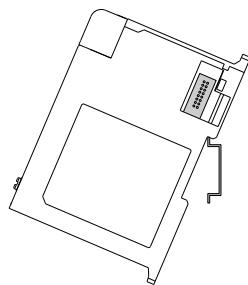
This procedure lets you use the assembled modules as a template for drilling holes in the panel. Due to module mounting hole tolerance, it is important to follow these procedures.

1. On a clean work surface, assemble no more than three modules.
2. Using the assembled modules as a template, carefully mark the center of all module-mounting holes on the panel.
3. Return the assembled modules to the clean work surface, including any previously mounted modules.
4. Drill and tap the mounting holes for the recommended M4 or #8 screw.
5. Place the modules back on the panel, and check for proper hole alignment.
6. Attach the modules to the panel by using the mounting screws.
7. Repeat these steps for any remaining modules.

## DIN Rail Mounting

The module can be mounted by using the following DIN rails: 35 x 7.5 mm (EN 50022 - 35 x 7.5) or 35 x 15 mm (EN 50022 - 35 x 15).

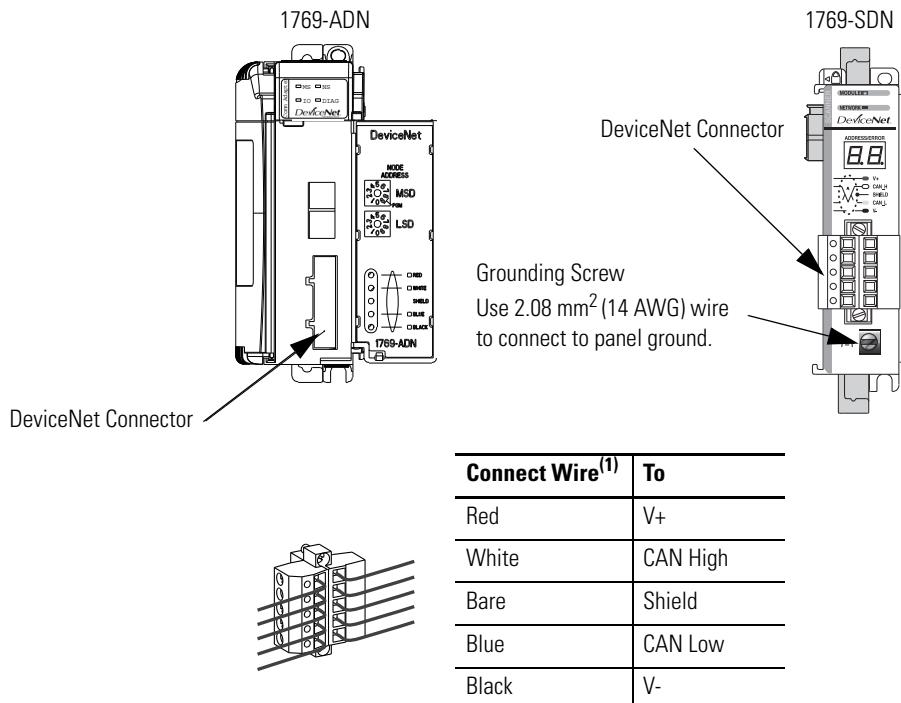
Before mounting the module on a DIN rail, close the DIN rail latches. Press the DIN rail mounting area of the module against the DIN rail. The latches will momentarily open and lock into place. DIN rail mounting dimensions are shown below.



Dimension	Height
A	118 mm (4.65 in.)
B	59 mm (2.325 in.)
C	59 mm (2.325 in.)

## Connect the Module to a DeviceNet Network

Follow these steps to wire the DeviceNet connector.



(1) DeviceNet cable colors are shown on the wiring label on the front of the scanner.

1. Connect the DeviceNet cable to the removable connector as shown.
2. Insert the removable female connector into the mating male connector on the DeviceNet scanner module.
3. Screw the removable connector to the scanner case with the upper and lower mounting screws with a torque of 0.6...0.7 N•m (5...6 lb•in).

**IMPORTANT** If the 1769-SDN module is the first or last device connected to the DeviceNet network trunkline, be sure to add a termination resistor (120  $\Omega$  1%  $\geq \frac{1}{4}W$  resistor, Allen-Bradley catalog number 1485A-C2) across the blue (CAN Low) and white (CAN High) wires.

## Set the Node Address

Set the node address using one of these methods:

- For the 1769-ADN, use the node address rotary switches as described in [Set the Node Address of a 1769-ADN Module](#).
- For the 1769-SDN, use RSNetWorx for DeviceNet software as described in [Set the Node Address of a 1769-SDN Module](#). The 1769-SDN module has no hardware mechanism to set its address.

## Set the Node Address of a 1769-ADN Module

The module supports DeviceNet node addresses 00...63. The factory default setting is node address 63.

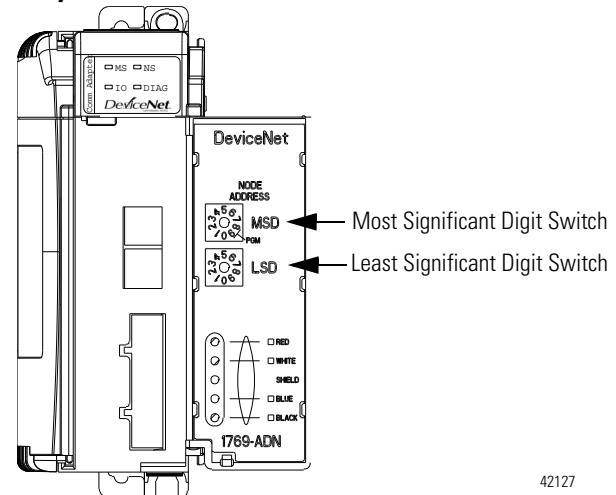
Set the node address by using the two rotary switches. Use a small, slotted screwdriver to set the switches. The switch labeled MSD (Most Significant Digit) sets the 10s while the switch labeled LSD (Least Significant Digit) sets the 1s.

Use the switches to select any network address from 00...63. Switch settings from 00...63 select node addresses 00...63. Switch settings from 64...99 instruct the adapter to use the software programmed value for the network address.

Switch setting 95 is reserved for factory use in Series B adapters.

The software programmed value is set via the node commissioning tool available in RSNetWorx for DeviceNet software and stored in nonvolatile memory on the 1769-ADN.

**Figure 4 - Node Address Rotary Switches**



**TIP**

The baud rate for the adapter is set by way of the module's Autobaud feature at powerup.

Use the removable, write-on label to mark your I.D. tag and other markings with permanent ink. Your markings are visible when the module door is closed.

**TIP**

Series B adapters that have their node address switches set to 95 start up in a special factory mode that does not support I/O connections. Series B adapters should not have their node address set to 95 for normal use.

## Set the Node Address of a 1769-SDN Module

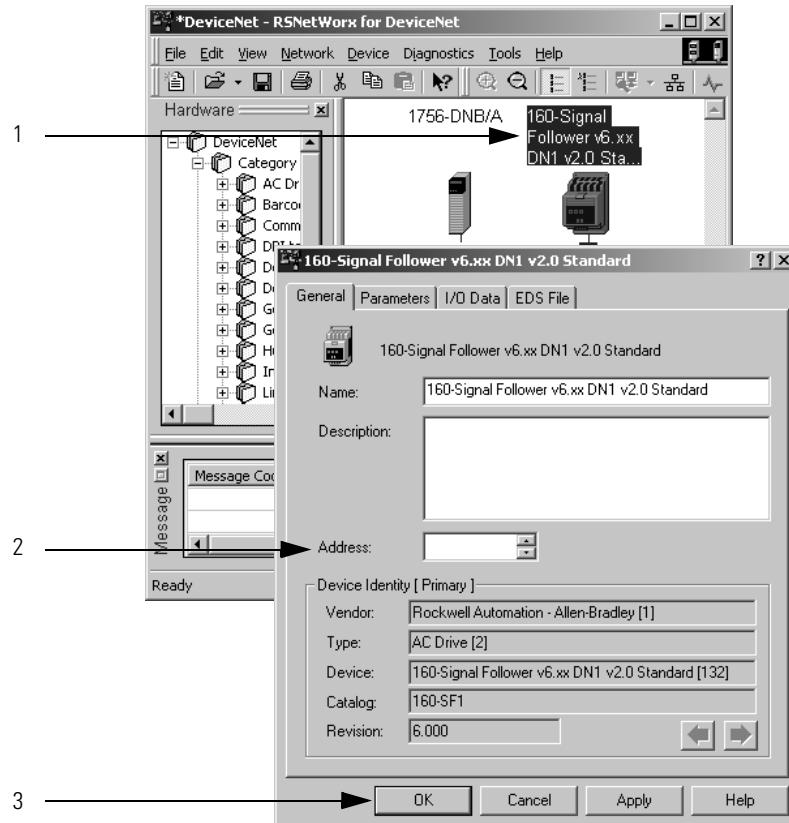
You can use the following options to set the node address of DeviceNet devices:

- [Set the Node Address via Software on page 33](#)
- [Set the Node Address via the DeviceNet Node Commissioning Tool on page 34](#)

### *Set the Node Address via Software*

Complete the following steps to set a device's node address in your network configuration file. This example uses an AC drive.

1. Start RSNetWorx for DeviceNet software and double-click the device.
2. Enter the DeviceNet address for the device.
3. Click OK to close the configuration window.



### *Set the Node Address via the DeviceNet Node Commissioning Tool*

You can use the DeviceNet node commissioning tool available in RSNetWorx for DeviceNet software to set the node addresses of devices on the DeviceNet network. Remember the following when you decide to use the DeviceNet node commissioning tool.

- You can only use this tool with a DeviceNet network that is online.
- You can only use this tool as you add new devices to the network that either do not have hardware mechanisms to set their node address or have their hardware mechanism set to a number higher than 63.

If you add a device to the network with a hardware mechanism setting the node address to 63 or lower, this tool does not change the device's node address.

- You should complete the tasks described in this section each time a new device is added to the network.
- If you add more than one device to the online network before using the DeviceNet node commissioning tool, you will experience duplicate node address conflicts on the network because all new devices initially use node address 63.
- Keep track of the node addresses you set with the DeviceNet node commissioning tool and verify they match the device's configuration in the RSNetWorx for DeviceNet software configuration file.

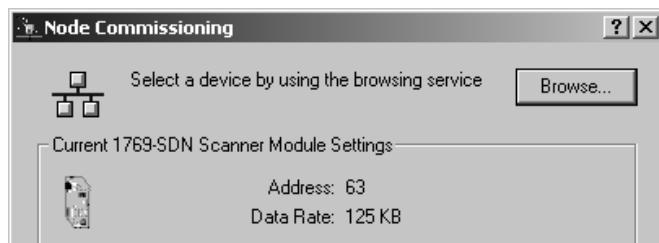
Complete the following steps to use the DeviceNet node commissioning tool to set a device's node address.

1. Verify that the network is online.
2. Connect a device to the DeviceNet network.
3. Choose Start>Programs>Rockwell Software>RSNetWorx for DeviceNet>DeviceNet node commissioning tool.

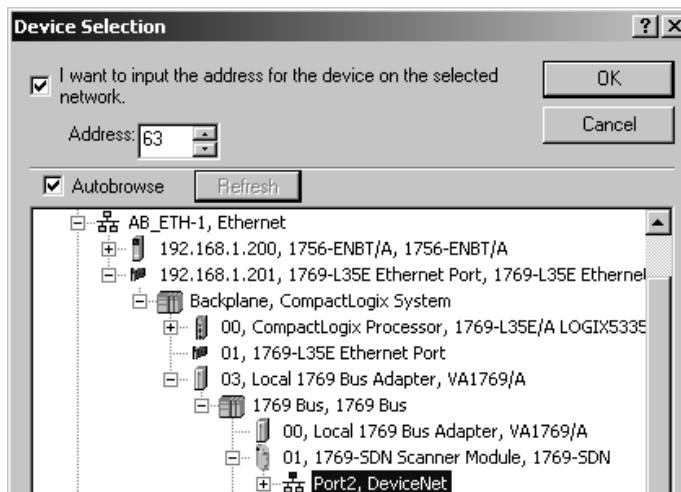
or

From the Tools pull-down menu in RSNetWorx for DeviceNet software, choose Node Commissioning.

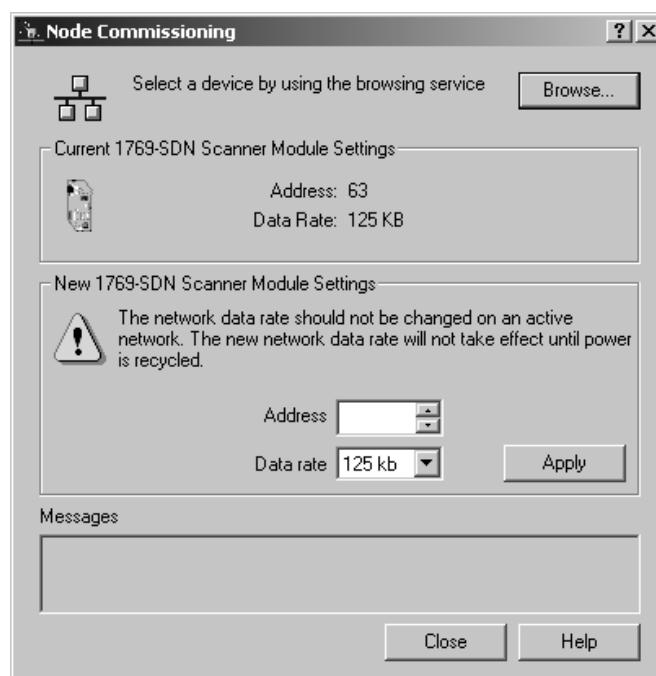
4. Click Browse.



5. On the Device Selection dialog box, check the 'I want to input the address for the device on the selected network' box.
6. Browse to the DeviceNet network.
7. Type the current address for the device. Out of the box, devices use address 63.
8. Click OK.



9. When you return to the Node Commissioning dialog box, enter the new address for the device.
10. Click Apply.
11. Look for confirmation in the Messages area.



## Download the Add-on Profile

If you are using a later firmware revision for the communication module than recognized in the most current version of RSLogix 5000 software, you may need to download the Add-on Profile (AOP) for the communication module so it can be recognized in the Controller Organizer.

1. Locate the module AOP at [http://www.rockwellautomation.com/  
support/controlflash/LogixProfiler](http://www.rockwellautomation.com/support/controlflash/LogixProfiler).

**IMPORTANT** You need a Rockwell Automation MySupport account to download the AOP. If you do not have one, follow the steps on the MySupport website to obtain an account.

2. Click the file to download it.
3. Enter your RSLogix 5000 software serial number and click Qualify for Update.
4. Download and extract the zipped files to a temporary directory.
5. Shut down any instances of RSLogix 5000 software that are currently running.
6. In the temporary directory, double-click the MPSetup.exe file and follow the onscreen instructions to install the AOP.

## Apply Chassis Power and Check Status Indicators

Before you apply power, you must install and mount a CompactLogix controller and Compact I/O power supply on the DIN rail.

To apply power, follow these steps.

1. Apply chassis power.
2. Check the power supply and status indicators to determine that the power supply and module are operating properly.

## Replace a Module within a System



**ATTENTION:** Do not remove or replace this module while power is applied. Interruption of the backplane can result in unintentional operation or machine motion.

The module can be replaced while the system is mounted to a panel or DIN rail.

1. Remove power.
2. Remove the DeviceNet cable from the module by removing the DeviceNet connector.
3. Remove the upper and lower mounting screws from the module or open the DIN latches by using a screwdriver.

4. On the module to be replaced and the right-side adjacent module (or end cap if the module is the last module in the bank), move the bus levers to the right (unlock) to disconnect the module from the adjacent modules.

5. Gently slide the disconnected module forward.

If you feel excessive resistance, be sure that you disconnected the module from the bus and that you removed both mounting screws or opened the DIN latches.

It may be necessary to rock the module slightly from front to back to remove it. In a panel-mounted system, you might need to loosen the screws of adjacent modules.

6. Before installing the replacement module, be sure that the bus lever on the right-side adjacent module is in the unlocked (fully right) position.

7. Slide the replacement module into the open slot.

8. Connect the modules together by locking (fully left) the bus levers on the replacement module and the right-side adjacent module or end cap.

9. Replace the mounting screws or snap the module onto the DIN rail.

10. Replace the DeviceNet cable by attaching the connector to the module.

11. Restore configuration by using RSNetWorx for DeviceNet software.

---

**IMPORTANT** Be sure that the new module has the same node address and communication rate as the module that was replaced.

---

## **Notes:**

## Configure a Workstation to Operate on a DeviceNet Network

Topic	Page
Connect a Computer to the DeviceNet Network	40
Configure a Driver for a Network	41

You can connect a computer to the network before or after connecting devices to the network. You can also connect a computer to the network before or after configuring the network **offline**.

You must connect a computer to the network before configuring the network **online**.

After you connect a computer to the system and configure a driver in RSLinx Classic software, you can complete these tasks:

- Configure the devices on the network.
- Configure network parameters.
- Upload, download, monitor, and program projects for Logix5000 controllers.

Some networks let you bridge to other networks in your system. This lets you connect to one network and access devices or controllers on other networks.

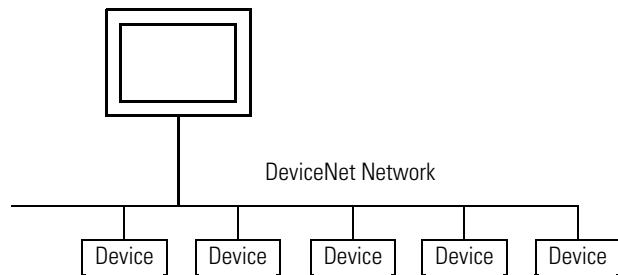
## Connect a Computer to the DeviceNet Network

To access the DeviceNet network, use one of these methods:

- Connect directly to the network via a DeviceNet interface device. If you connect directly to a DeviceNet network, you can access only the devices on that network.

This graphic shows a computer connected directly to a DeviceNet network by using a 1784-PCIDS Universal PCI Scanner Card.

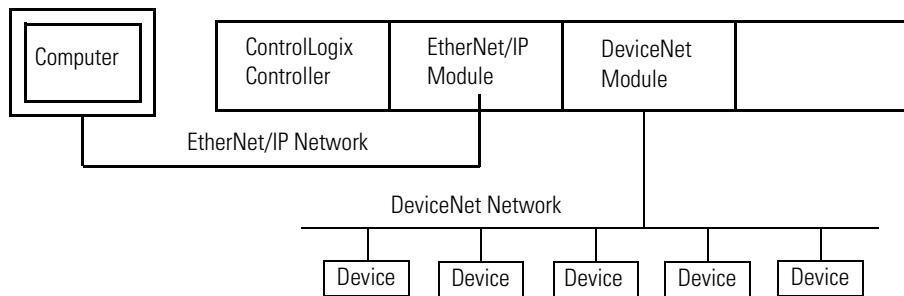
**Figure 5 - Connect Directly to a DeviceNet Network**



- Connect to a different network and bridge to the desired DeviceNet network. This requires **no** additional programming.

This graphic shows a computer connected to a DeviceNet network through an EtherNet/IP network used with a ControlLogix system.

**Figure 6 - Connect to a DeviceNet Network through an EtherNet/IP Network**



Depending on how you decide to connect your computer to the DeviceNet network, do the following.

1. If you are connecting directly to the network, install the 1784-PCD card, 1784-PCIDS card, or 1784-U2DN cable.
  - For more information on installing the 1784-PCD card, refer to the DeviceNet Communication Card installation instructions, publication [1784-IN029](#).
  - For more information on installing the 1784-PCIDS card, refer to the DeviceNet Universal PCI Scanner Card installation instructions, publication [1784-IN004](#).
  - For more information on installing the 1784-U2DN cable, refer to the USB-to-DeviceNet Cable installation instructions, publication [1784-IN046](#).
2. If you are connecting to a different network and bridging to the DeviceNet network, install the required communication modules.
3. Connect the computer to the network with the correct cable.

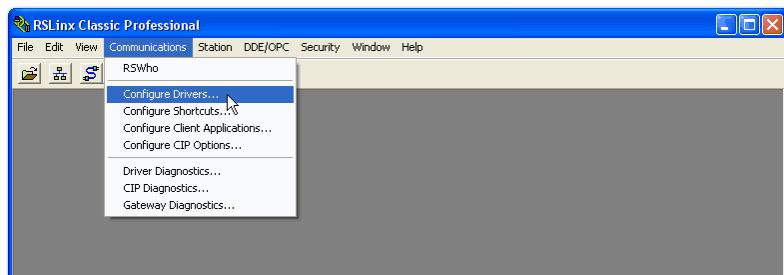
## Configure a Driver for a Network

To communicate over a specific network, configure a driver in RSLinx Classic software for the appropriate network.

**IMPORTANT** If RSLinx Classic software, version 2.54 or later, is installed on the computer, the device driver is already installed on the computer. Skip this section.

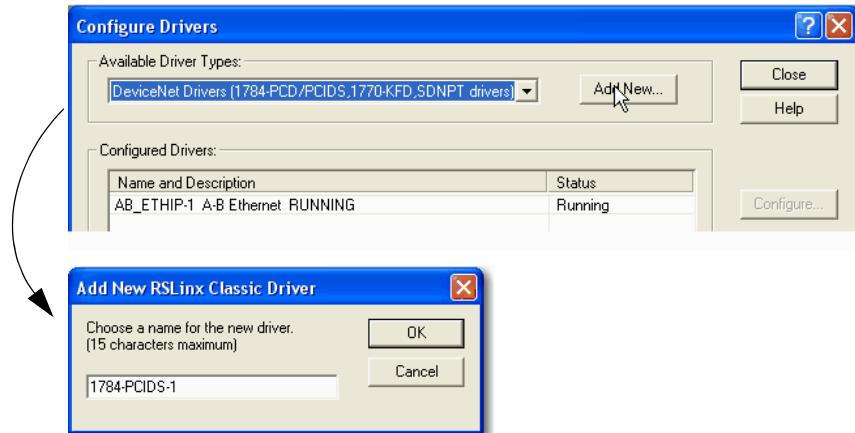
Complete the following steps to configure a driver for the network.

1. In RSLinx Classic software, from the Communications pull-down menu, choose Configure Drivers.



The Configure Drivers dialog box appears.

2. From the Available Driver Types pull-down menu, choose DeviceNet Drivers.
3. Click Add New and name the new driver.
4. Click OK.

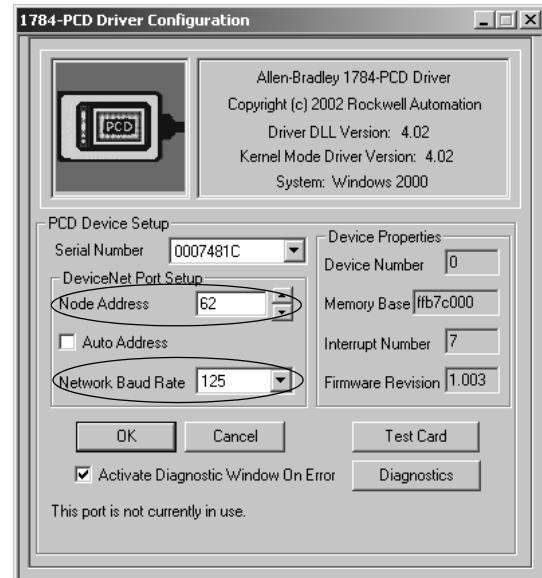


5. Configure the driver.

The configuration screens may differ for each driver.

#### *Driver Configuration*

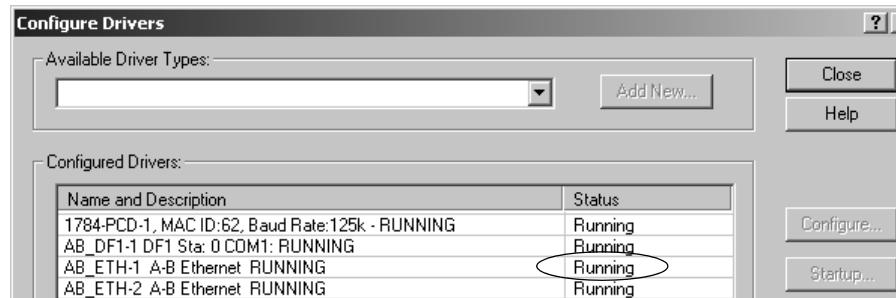
If unused, use the default Node Address of 62 and set your Network Baud Rate.



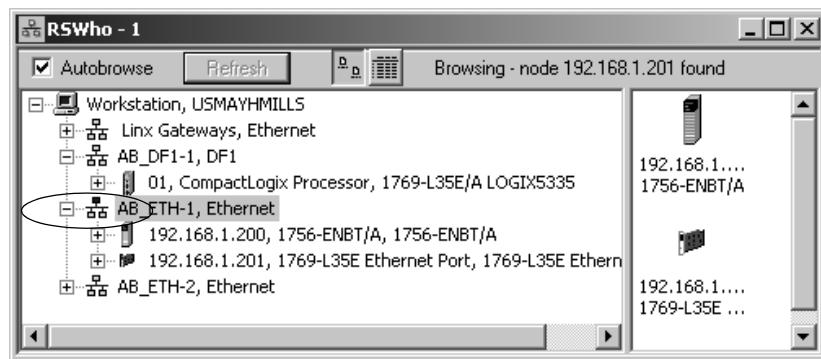
## Verify that the Driver Works

Complete these steps to verify that the driver works.

1. Open the Configure Drivers dialog box and verify that the driver is running.



2. Close the Configure Drivers dialog box.
3. Open the RSWho dialog box.
4. Double-click the driver to see the network.



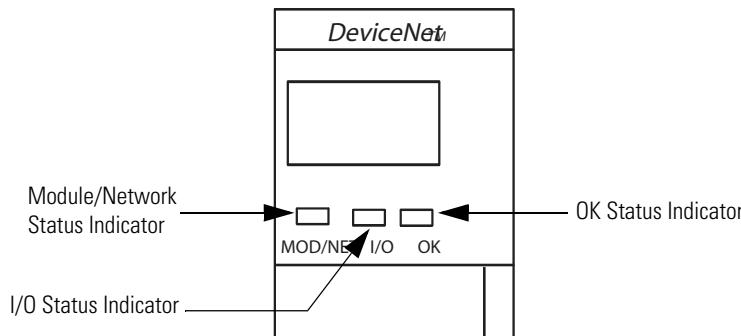
## **Notes:**

## 1756 DeviceNet Status Indicators and Data Structures

Topic	Page
1756-DNB DeviceNet Scanner Status Indicators	45
1756-DNB DeviceNet Scanner Alphanumeric Display	47
1756-DNB DeviceNet Scanner Data Structures	51

### 1756-DNB DeviceNet Scanner Status Indicators

The 1756-DNB scanner has three status indicators that provide information about your network and its connections.



Status Indicator	Description
Module/Network (MOD/NET) Status	A bicolor (green/red) status indicator that provides device and communication status.
I/O Status	A bicolor (green/red) status indicator that provides the status of inputs and outputs, including the following: <ul style="list-style-type: none"><li>• Whether the device has outputs under its control</li><li>• Whether any outputs or inputs are active or faulted</li><li>• Mod/state of the inputs and outputs, but not necessarily the On/Off condition of the I/O points</li></ul>
OK Status	A bicolor (green/red) status indicator that reflects whether the device has power and is operating properly.

**Table 3 - Module/Network Status (MOD/NET) Indicator**

Status	Description
Off	<p>One of the following conditions exists:</p> <ul style="list-style-type: none"> <li>• The device has not completed the Dup_MAC_ID test.</li> <li>• The device may not have power.</li> </ul> <p>Either wait for the Dup_MAC_ID test to complete or make sure the device has power.</p>
Solid green	<p>The device is fully operational and is communicating with other devices on the network:</p> <ul style="list-style-type: none"> <li>• For a Group 2 only device, this means the device is allocated to a master.</li> <li>• For a UCMM capable device, this means the device has one or more established connections.</li> </ul> <p>No action is necessary.</p>
Flashing green <sup>(1)</sup>	<p>The device is fully operational and online. However, it is not communicating with other devices on the network because of one of the following conditions:</p> <ul style="list-style-type: none"> <li>• The device has passed the Dup_MAC_ID test, is online, but has no established connections to other nodes.</li> <li>• For a Group 2 only device, this means the device is not allocated to a master.</li> <li>• For a UCMM capable device, this means that the device has no established connections.</li> <li>• The configuration is missing, incomplete, or incorrect.</li> </ul> <p>No action is required until you need the device to communicate with other devices. In that case, check your system configuration.</p>
Flashing red <sup>(1)</sup>	<p>Either or both of the following conditions exist:</p> <ul style="list-style-type: none"> <li>• A recoverable fault has occurred.</li> <li>• Communication with at least one device has timed out.</li> </ul> <p>Check the 4-character display to determine which device has timed out.</p>
Solid red	<p>Any of the following conditions exist:</p> <ul style="list-style-type: none"> <li>• Another device is using the same address. In this case, change the device address to a unique value.</li> <li>• Communication problems on the network (bus off condition). In this case, make sure all devices are operating at the same communication rate.</li> <li>• Device has an unrecoverable fault. In this case, replace the scanner.</li> </ul> <p>For more corrective actions, see status code 91 on <a href="#">page 50</a>.</p>

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

**Table 4 - I/O Status Indicator**

Status	Description
Off	<p>The scanner is not powered.</p> <p>Apply chassis power, and verify the module is completely inserted into the chassis.</p>
Solid green	<p>The scanner is in Run mode, outputs are under control, and inputs are being consumed.</p> <p>No action is necessary.</p>
Flashing green <sup>(1)</sup>	<p>The scanner is in Idle mode, outputs are <b>not</b> under control, and inputs are being consumed.</p> <p>To control output devices, place the scanner in Run mode.</p>

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

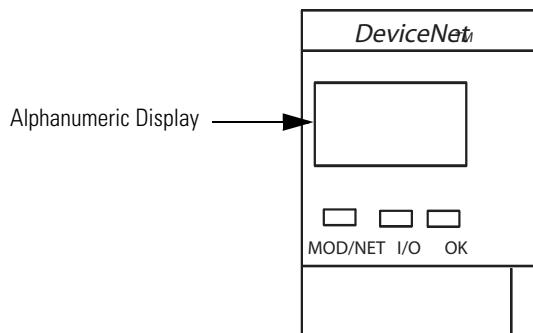
**Table 5 - OK Status Indicator**

Status	Description
Off	The device is not powered. Apply chassis power, and verify the module is completely inserted into the chassis.
Solid green	The device is operating normally and has at least one connection to it from a controller. No action is necessary.
Flashing green <sup>(1)</sup>	The device is operating correctly, but no controller is controlling it. Verify that the 1756-DNB scanner module is properly configured in the controller's I/O configuration.
Solid red	One of the following conditions exists: <ul style="list-style-type: none"> <li>The device is in Self-test mode. In this case, wait until the test completes.</li> <li>During powerup, the device has experienced an unrecoverable fault. In this case, complete these steps.               <ol style="list-style-type: none"> <li>Wait for the device to complete its power-up sequence.</li> <li>If the device appears to have completed its power-up sequence and the indicator remains solid red, cycle power.</li> <li>If after cycling power the status indicator still remains solid red, replace the device.</li> </ol> </li> </ul>

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

## 1756-DNB DeviceNet Scanner Alphanumeric Display

The 1756-DNB scanner has an alphanumeric display that provides diagnostic information about your module through status messages and status codes. The display flashes messages and codes at approximately one-second intervals.



## Status Messages

This table summarizes the DeviceNet status messages that appear on the alphanumeric display.

**Table 6 - Status Messages**

Display	Description
RUN	The scanner is in Run mode.
IDLE	The scanner is in Idle mode.
AUTO	The AutoScan option is on, and the scanner is in Idle mode.
Flash In Progress	ControlFLASH software is transferring an upgrade image to the scanner.
Duplicate Node Failure	The node address of the scanner is in use by another device on the DeviceNet network.
Bus Off Detected	The scanner has detected errors on the DeviceNet network and is offline.
No Network Power	The DeviceNet cable is not supplying power to the communication port. Troubleshoot the system to determine why power is not supplied and turn on power to the network.
NoRx	Either or both of the following conditions exist: <ul style="list-style-type: none"> <li>The device does not have a scan list. In this case, configure a scan list.</li> <li>The device has not received communication from any other device. In this case, check the system configuration to determine why communication is not occurring.</li> </ul>
NoTx	Either or both of the following conditions exist: <ul style="list-style-type: none"> <li>The scanner has failed to transmit a message due to a network or device issue.</li> <li>The scanner is the only node on the network.</li> </ul>
Reset Complete - Change Switch Settings	The factory default settings for the scanner have been restored. Set the data rate and node address rotary switches to the desired position and restore power to the scanner.
Network disabled	The scanner is not enabled. To enable the scanner, locate the O.CommandRegister.DisableNetwork bit on the command register and turn it off.
A#xx	Indicates the scanner's DeviceNet node address where xx is the address.
N#xx	Indicates there is a problem with another device on the network where xx is the address of the device. The status code for the device follows the address. Refer to <a href="#">Table 7 on page 49</a> for more information about status codes.
E#xx	Indicates a status code for a device with a problem where xx is the status code for the device. The address of the device comes before the status code. Refer to <a href="#">Table 7 on page 49</a> for more information about status codes.

## Status Codes

This table summarizes the DeviceNet status codes that appear on the alphanumeric display.

**Table 7 - Status Codes**

Status Code	Description	Recommended Action
0...63	Indicates the scanner's DeviceNet node address.	None.
65	The AutoScan option is on and the device is in Idle mode.	None.
67	The scanner is the secondary scanner.	None.
68	The primary scanner has detected no secondary scanner.	Configure another scanner to be the secondary scanner.
69	The primary and secondary configurations are mismatched.	Check configuration of the secondary scanner.
70	The address of the device is already in use by another device on the network. The scanner failed the duplicate node address check.	Change the address of the device to an unused address.
71	There is invalid data in the scan list.	Use RSNetWorx for DeviceNet software to reconfigure the scan list.
72	The slave device stopped communicating. If the slave device does not recover communication during the next scan, the status code changes to 78.	Verify the slave device's power and communication connections. If the slave device is polled, verify that the interscan delay time is adequate for the device to return data.
73	The slave device's identity information does not match the electronic key in the scanner.	<ul style="list-style-type: none"> <li>Make sure that the correct device is connected at this address.</li> <li>Make sure that the device matches the specified electronic key, such as vendor, product code, or product type.</li> </ul>
74	The scanner detected a data overrun on the DeviceNet communication port.	<ul style="list-style-type: none"> <li>Modify your configuration and check for invalid data.</li> <li>Check network communication traffic.</li> </ul>
75	Either or both of the following may be true: <ul style="list-style-type: none"> <li>The device does not have a scan list.</li> <li>The device has not received communication from any other device.</li> </ul>	Verify that the device has the following: <ul style="list-style-type: none"> <li>A configured scan list</li> <li>A properly-wired connection to the network</li> </ul>
76	There is no direct network traffic for the scanner. The scanner hears other network communication but does not hear any communication directed to it.	None.
77	During initialization, the data size expected by the device does not match the scan list entry.	Use RSNetWorx for DeviceNet software to check the slave device and the scan list for the correct input and output sizes for the slave device.
78	The device is configured in the scan list, but not communicating. The device has failed to communicate during the scanner's second scan, which followed the display of status error code 72.	Verify device's power and communication connections. If the device is polled, make sure the interscan delay is long enough for the device to return its data. If necessary, use RSNetWorx for DeviceNet software to do the following: <ul style="list-style-type: none"> <li>Add the device to the DeviceNet network.</li> <li>Delete the device from scanner's scan list.</li> <li>Inhibit the device in the scanner's scan list.</li> </ul>
79	The scanner has failed to transmit a message. The error status usually displays after the duplicate node check completes and power is applied to the module.	<ul style="list-style-type: none"> <li>Make sure the scanner is connected to a valid network.</li> <li>Check for disconnected cables.</li> <li>Verify the network communication rate.</li> </ul>
80	The scanner is in Idle mode.	<ul style="list-style-type: none"> <li>Put the controller in Run or Remote Run mode by using the keyswitch on the controller or through RSLogix 5000 software.</li> <li>Turn on the bit 0.CommandRegister and run for the scanner.</li> </ul>

**Table 7 - Status Codes**

Status Code	Description	Recommended Action
81	The controller has set the scanner to the Faulted mode. The Command bit also indicates a DeviceNet network fault state.	The Bit O.CommandRegister.Fault for the scanner is on. Correct the condition that caused the controller to set this bit and then turn this bit off.
82	An error was detected in a sequence of fragmented I/O messages from the device.	Use RSNetWorx for DeviceNet software to do the following: <ul style="list-style-type: none"> <li>Check the scan list of the device to make sure that its input and output data sizes are correct.</li> <li>Check the configuration of the device.</li> </ul>
83	The device returns error responses when the scanner attempts to communicate with it.	Use RSNetWorx for DeviceNet software to do the following: <ul style="list-style-type: none"> <li>Check the accuracy of the scan list.</li> <li>Check the configuration of the device. The device may be in another scanner's scan list.</li> <li>Use the slave device's documentation to verify that the device supports the message type used by the scanner. If the device's message type does not match the scanner's, then use RSNetWorx for DeviceNet software to access the scanner's scan list and change the scanner's message type to one that is compatible with the slave device.</li> <li>Cycle power to the device.</li> </ul>
84	The scanner is initializing the DeviceNet network.	None. This code clears itself once the scanner attempts to initialize all the devices on the network.
85	During runtime, the data size sent by the slave device does not match the size in the corresponding scan list entry.	Because variable length poll data is not supported, verify that the slave device is functioning properly.
86	The device is in Idle mode, or not producing data, while the scanner is in Run mode.	<ul style="list-style-type: none"> <li>Check the configuration and status of the device.</li> <li>If you set up an interlock between two scanners (controllers), make sure both scanners are in Run mode.</li> </ul>
87	The scanner cannot listen to shared inputs from the slave device because the owning scanner has not established communication with that slave device.	<ul style="list-style-type: none"> <li>Verify the primary scanner connection and configuration.</li> <li>Verify that the slave device is producing data.</li> </ul>
88	The scanner cannot listen to shared inputs from the slave device because I/O parameters, such as electronic key or data size, for that slave device are configured differently between this scanner and the owning scanner.	In this scanner, reconfigure the I/O parameters for the shared inputs scan list entry so that they match those same parameters in the owning scanner.
89	The scanner failed to configure a device using the Automatic Device Recovery (ADR) parameters.	<ul style="list-style-type: none"> <li>Make sure that you installed a compatible device.</li> <li>If the offline configuration of the device does not match the actual (online) configuration of the device, change the offline configuration to match the online configuration.</li> </ul>
90	The controller has set the scanner to Disabled mode.	If desired, enable the scanner by locating the O.CommandRegister.DisableNetwork bit on the command register and turning it off.
91	Indicates a Bus-off condition likely due to cable or signal errors.	<ul style="list-style-type: none"> <li>Cycle power to the device.</li> <li>Verify that all devices are set to the same communication rate.</li> <li>Check DeviceNet cabling to make sure no short circuits exist between CAN (blue and white) wires and power or shield (black, red, and shield) wires.</li> <li>Check the media system for the following noise sources: <ul style="list-style-type: none"> <li>Close proximity to high-voltage power cable</li> <li>Incorrect or no termination resistor</li> <li>Improper grounding</li> <li>Noise produced from another device on the network</li> <li>Incorrect data for the network</li> </ul> </li> </ul>

**Table 7 - Status Codes**

Status Code	Description	Recommended Action
92	The DeviceNet cable is not supplying power to the device's communication port.	<ul style="list-style-type: none"> <li>Verify that the network's 24V DC power supply is operating properly.</li> <li>Verify the cable is in good condition.</li> <li>Check the cable connections to the device.</li> </ul>
95	A device's firmware is being updated or a configuration is being downloaded.	None. Do not disconnect the device while the update is in process because existing data in the device memory will be lost.
96	The communication port is in Test mode.	None.
97	The controller has placed the scanner in Halt mode.	If the O.CommandRegister.HaltScanner bit is on, turn it off. Then cycle scanner power.
98	General firmware error.	Replace device.
99	System failure.	Replace device.

## 1756-DNB DeviceNet Scanner Data Structures

The 1756-DNB scanner module supports several sizes of input, output, and status structures over the ControlLogix backplane. These I/O structures were created to reduce the complexity of connecting DeviceNet I/O and status data with ladder programs.

The module creates all three structures whether DeviceNet devices are configured or online.

RSLogix 5000 software directs the controller to connect to these predefined default I/O structures. The controller automatically performs periodic updates of the structures on a cyclic basis.

RSNetWorx for DeviceNet software configures scan list map segments that are used to copy specific portions of I/O data between the I/O structures and DeviceNet network packets.

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**IMPORTANT** Only one Logix controller at a time can send outputs to the 1756-DNB scanner module.

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## Input Structure

The controller receives input I/O by reading input data from an input structure in the 1756-DNB scanner module. The scanner module receives input data from DeviceNet modules and delivers a copy of these values to the controller. The input structure consists of one 32-bit status register and a variable size 32-bit array of up to 124 words for input data. The 32-bit status register reflects the current state of several key module-level operational parameters.

The input structure consists of these data elements.

Input Structure Element	Data Type
module status register	1 x 32-bit register
input_data	123 x 32-bit variable size data array

## Output Structure

The controller controls output I/O by writing output data to an output structure in the 1756-DNB scanner module. The scanner module then delivers a copy of these output values to modules on the DeviceNet network. The output structure consists of a 32-bit command register and a variable size 32-bit array of up to 123 words for output data. The 32-bit command register consists of several bits that affect the module's behavior on the network.

The output structure consists of these data elements.

Output Structure Element	Data Type
module command register	1 x 32-bit register
output_data	123 x 32-bit data array

## Module Command Register Bit Definitions

The bits of the Module Command Register are defined as follows.

Bit	Name	Description
0	Run	1 = Run mode 0 = Idle mode
1	Fault	1 = Fault network
2	DisableNetwork	1 = Disable network
3	HaltScanner	1 = Halt module The 1756-DNB scanner module ceases all operation.
4	Reset	1 = Reset module (put back to 0 to resume operation)
5...31	Reserved	Unused

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**IMPORTANT** If the module is halted because the HaltScanner bit is set, power must be physically cycled to restart the module.

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## Module Status Register Bit Definitions

The Module Status Register bits are defined as follows.

Bit	Name	Description
0	Run	1 = in Run mode 0 = in Idle mode
1	Fault	1 = Network is faulted
2	DisableNetwork	1 = Network is disabled
3	DeviceFailure	1 = Device failure exists (examine the status structure for causes)
4	AutoverifyFailure	1 = At least one device has failed to be initialized by the scanner
5	CommFailure	1 = Communication failure exists
6	DupNodeFail	1 = Failure due to duplicate node address
7	DnetPowerDetect	1 = DeviceNet power failure
8	NetworkWarning	1 = Scanner has detected numerous receive and/or transmit errors—check the integrity of the DeviceNet network
9...31	Reserved	Unused

## Status Structure

The controller receives status information concerning the 1756-DNB scanner module's ability to exchange DeviceNet messages with other nodes by reading from the status structure in the 1756-DNB scanner module. The scanner module periodically updates the contents of the status structure and copies its contents to the controller. The status structure consists of several tables. The bit position of each of the 64-bits that make up a given status table directly corresponds to the node address of a device.

The status structure consists of these data elements.

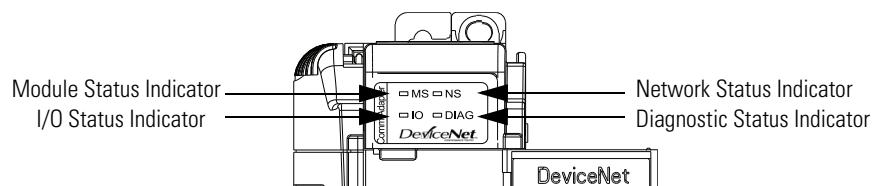
Status Structure Element	Description	Data Type	DINTS
ScanCounter	Counter incremented each I/O scan	32-bit	10
DeviceFailureRegister	Device failed bit table; 1 = failed	64-bit	
AutoverifyFailureRegister	Device I/O size does not match scanner's internal table; 1 = mismatch	64-bit	
DeviceIdleRegister	Device is idle bit table; 1 = idle	64-bit	
ActiveNodeRegister	Node online bit table; 1 = online	64-bit	
StatusDisplay	ASCII representation of scanner alphanumeric display	4-byte	
ScannerDeviceStatus	Scanner device status	4-byte binary	11
ScannerAddress	DeviceNet address of 1756-DNB scanner module	8-bit binary	
ScannerStatus	Status of 1756-DNB scanner module	8-bit binary	
ScrollingDeviceAddress	Scrolls through DeviceNet nodes once per second by address and status; 0 = no faults	8-bit binary	
ScrollingDeviceStatus		8-bit binary	
ReservedArray	Future expansion (20 bytes)	20 x 8-bit	16
DeviceStatus	DeviceNet node status array, byte per device	64 x 8-bit	24/32

## 1769 DeviceNet Modules Status Indicators and Data Structures

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### 1769-ADN Adapter Status Indicators

The 1769-ADN adapter has four status indicators that provide information about your network and its connections.



Status Indicator	Description
Module Status Indicator	A bicolor (green/red) status indicator that provides device status.
I/O Status Indicator	A bicolor (green/red) status indicator that provides the status of inputs and outputs, including the following: <ul style="list-style-type: none"><li>• Whether the adapter has outputs under its control</li><li>• Whether any outputs or inputs are active or faulted</li><li>• Mod/state of the inputs and outputs, but not necessarily the On/Off condition of the I/O points</li></ul>
Network Status Indicator	A bicolor (green/red) status indicator that provides communication status.
Diagnostic Status Indicator	A bicolor (green/red) status indicator that provides the status of diagnostic tests.

**Table 8 - Module Status Indicator**

Status	Description
Off	The adapter is not powered. Verify that the adapter is installed correctly.
Flashing green	The adapter is online, but the configuration is missing. Configure the adapter.
Solid green	The adapter is fully operational and is communicating with other devices on the network. No action is required.
Flashing red	The adapter has experienced a recoverable fault due to one of these conditions: <ul style="list-style-type: none"> <li>• Configuration is incorrect.</li> <li>• Duplicate MAC ID check has failed.</li> <li>• Node address switch has changed.</li> <li>• Main program checksum has failed.</li> <li>• Configured I/O size is too large.</li> </ul>
Solid red	The adapter has experienced an unrecoverable fault due to one of these conditions: <ul style="list-style-type: none"> <li>• Terminator/end cap is missing.</li> <li>• Connector or cable between devices is missing or no longer connected.</li> <li>• An issue with the configuration memory exists.</li> <li>• Watchdog has been tripped.</li> </ul>

**Table 9 - I/O Status (IO) Indicator**

Status	Description
Off	The adapter is not powered. Verify that the adapter is installed correctly.
Flashing green	The adapter is in Idle mode, outputs are not under control, and inputs are being consumed. To control output devices, place the adapter in Run mode.
Solid green	The adapter is in Run mode, outputs are under control, and inputs are being consumed. No action is required.
Flashing red	The adapter has experienced a recoverable fault because one or more of the I/O modules may be in Fault mode. Check the I/O modules to determine which ones are in Fault mode and remedy that issue.
Solid red	The adapter has experienced an unrecoverable fault because one or more of the I/O modules may be in Fault mode. Check the I/O modules to determine which ones are in Fault mode and remedy that issue. If you remedy the issue and the status indicator remains solid red, replace the adapter.

**Table 10 - Network Status (NS) Indicator**

<b>Status</b>	<b>Description</b>
Off	The network or the adapter is not powered. Check power connections to the network and then verify that the adapter is installed correctly.
Flashing green	The device is fully operational but is not communicating with the controller. Make sure the scanner is correctly configured in the controller's I/O configuration.
Solid green	The device is fully operational and communicating with the controller. No action is required.
Flashing red	One or both of these conditions exist: <ul style="list-style-type: none"> <li>• A recoverable fault has occurred.</li> <li>• Communication with at least one device has timed out.</li> </ul> Check the 4-character display to determine which device has timed out.
Solid red	The adapter is powering up, or has fully powered up, and experienced an unrecoverable fault. <ol style="list-style-type: none"> <li>1. If necessary, wait for the adapter to fully power up.</li> <li>2. Cycle power to the adapter.</li> <li>3. If after cycling power, the status indicator remains solid red, replace the adapter.</li> </ol>

**Table 11 - Diagnostic Status (DIAG) Indicator**

<b>Status</b>	<b>Description</b>
Off	The adapter is not powered or is running diagnostics. Apply power to the adapter or wait for it to finish running diagnostics.
Flashing amber	The Main program detected an error.
Flashing green	Diagnostic tests are in progress. Wait for the tests to finish.
Flashing red	Diagnostics found an error. The number of flashes indicates which test failed: <ul style="list-style-type: none"> <li>• One flash—RAM test failed.</li> <li>• Two flashes—Boot program checksum failed.</li> <li>• Three flashes—Main program checksum failed.</li> <li>• Four flashes—Configuration checksum failed.</li> <li>• Five flashes—Access to program or configuration failed.</li> <li>• Six flashes—Backplane power fault (series B only).</li> </ul>
Solid red	Watchdog has been tripped.

## 1769-ADN Adapter Data Structures

The scanner uses the input and output data images to transfer data, status, and command information between the adapter and the scanner.

### Input Data

This is the I/O data the 1769-ADN adapter sends to the DeviceNet master. All inputs are in words.

Word	Bit Position															
	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
0	V16	V15	V14	V13	V12	V11	V10	V9	V8	V7	V6	V5	V4	V3	V2	V1
1	X	NS	V30	V29	V28	V27	V26	V25	V24	V23	V22	V21	V20	V19	V18	V17
2	Input data for slot 1 <sup>(1)</sup>															
3	"															
"	"															
n	Input data for slot 30 <sup>(1)</sup>															

(1) The amount of input data for each module is based on the configuration of each I/O module done as part of the 1769-ADN configuration. Note that if an I/O module is configured to have 0 words of input data, then there are no input data words for that module in the 1769-ADN adapter's input image.

V1 = Data invalid from slot 1 (1 = invalid data)

V2 = Data invalid from slot 2

V3 = Data invalid from slot 3

...

V30 = Data invalid from slot 30 where 1 = data invalid or a module error is detected; 0 = data valid, no module error

NS = Node address switch changed where 1 = node address switch changed since power-up

X = Reserved

### Output Data

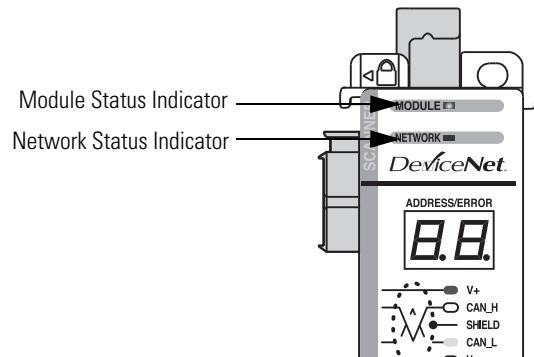
This is the I/O data the DeviceNet master sends to the 1769-ADN adapter. All outputs are in words.

Word	Bit Position															
	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
0	Output data for slot 1 <sup>(1)</sup>															
1	"															
"	"															
n	Output data for slot 30 <sup>(1)</sup>															

(1) The amount of output data for each module is based on the configuration of each I/O module done as part of the 1769-ADN configuration. Note that if an I/O module is configured to have 0 words of output data, then there are no output data words for that module in the 1769-ADN adapter's output image.

## 1769-SDN Scanner Status Indicators

The 1769-SDN scanner has two status indicators that provide information about the scanner and its network connection.



Status Indicator	Description
Module Status Indicator	A bicolor (green/red) status indicator that provides device status.
Network Status Indicator	A bicolor (green/red) status indicator that provides communication status.

**Table 12 - Module Status Indicator**

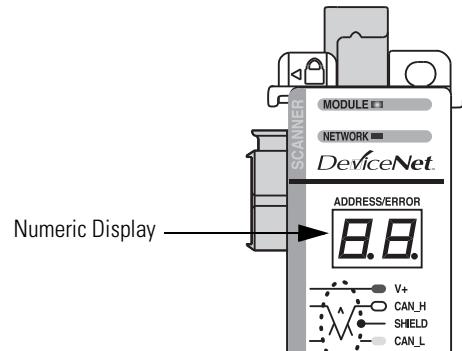
Indicator Condition	Description
Off	The scanner is not powered. Apply power.
Flashing green	No Bus Master (MicroLogix or CompactLogix controller) is present. Complete these steps to address this issue. 1. Verify that module connectors are properly seated. 2. If the connectors are properly seated, cycle power to the controller. 3. If cycling power does not correct the issue, replace the controller. 4. If replacing the controller does not correct the issue, replace the scanner.
Solid green	The scanner is fully operational and is communicating with other devices on the network.
Flashing red	The scanner has experienced a recoverable fault because one of these conditions exists: <ul style="list-style-type: none"><li>Memory has been erased.</li><li>Memory is being programmed.</li></ul> Complete the update or start a new update.
Solid red	The scanner has experienced an unrecoverable fault. Complete these steps to address this issue. 1. Verify that the module connectors are properly seated. 2. If the connectors are properly seated, verify that the bus terminator/end cap is installed. 3. If the bus terminator/end cap is installed, cycle power. 4. If, after cycling power, the status indicator is still solid red, replace the scanner.

**Table 13 - Network Status Indicator**

Indicator Condition	Description
Off	<p>One of these conditions exists:</p> <ul style="list-style-type: none"> <li>• The scanner is not powered.</li> <li>• The network is not powered.</li> <li>• Communication is not occurring between the scanner and the DeviceNet network. (This may be an acceptable condition.)</li> </ul> <p>Complete these steps to change this state.</p> <ol style="list-style-type: none"> <li>1. Verify that the scanner has power.</li> <li>2. Check that the DeviceNet cable is securely connected and the DeviceNet network is powered.</li> <li>3. Verify that network power is adequate (11...25V DC).</li> </ol>
Flashing green	<p>The scanner is fully operational, but there are no connections established with any of the devices on the network.</p> <p>If the scanner should be controlling DeviceNet slaves, configure its scan list.</p>
Solid green	<p>The scanner is fully operational and communicating with the controller.</p>
Flashing red	<p>One or more of the devices that the scanner is communicating with is in a timed-out state.</p> <p>Monitor the status display to determine which slave device is offline.</p>
Solid red	<p>A critical network failure has occurred because a duplicate DeviceNet node address has been detected.</p> <p>Reset the scanner and change the node address of either the scanner or that of the conflicting device. If the failure continues, replace the scanner.</p>

## 1769-SDN Scanner Status Codes

The 1769-SDN scanner has a 2-character numeric display that provides the DeviceNet node address and diagnostic information about the status of the module.



Numeric Display	Description
0...63	Indicates the 1769-SDN module's DeviceNet node address.
70...99	Indicates a status code for the displayed node address.
Alternating numbers	<ul style="list-style-type: none"> <li>0...63—Indicates the node number that has generated an error.</li> <li>70...99—Indicates the status code.</li> </ul>

**Table 14 - Status Codes**

Status Code	Description	Recommended Action
0...63	Indicates the scanner's DeviceNet node address.	None.
65	The AutoScan option is on and the device is in Idle mode.	None.
67	The scanner is the secondary scanner.	None.
68	The primary scanner has detected no secondary scanner.	Configure another scanner to be the secondary scanner.
69	The primary and secondary configurations are mismatched.	Check configuration of the secondary scanner.
70	The address of the device is already in use by another device on the network. The scanner failed the duplicate node address check.	Change the address of the device to an unused address.
71	There is invalid data in the scan list.	Use RSNetWorx for DeviceNet software to reconfigure the scan list.
72	The slave device stopped communicating. If the slave device does not recover communication during the next scan, the status code changes to 78.	<p>Verify the slave device's power and communication connections.</p> <p>If the slave device is polled, verify that the interscan delay time is adequate for the device to return data.</p>
73	The slave device's identity information does not match the electronic key in the scanner.	<ul style="list-style-type: none"> <li>Make sure that the correct device is connected at this address.</li> <li>Make sure that the device matches the specified electronic key, such as vendor, product code, or product type.</li> </ul>
74	The scanner detected a data overrun on the DeviceNet communication port.	<ul style="list-style-type: none"> <li>Modify your configuration and check for invalid data.</li> <li>Check network communication traffic.</li> </ul>
75	Either or both of these may be true: <ul style="list-style-type: none"> <li>The device does not have a scan list.</li> <li>The device has not received communication from any other device.</li> </ul>	<p>Verify that the device has the following:</p> <ul style="list-style-type: none"> <li>A configured scan list</li> <li>A properly-wired connection to the network</li> </ul>
76	There is no direct network traffic for the scanner. The scanner hears other network communication but does not hear any communication directed to it.	None.

**Table 14 - Status Codes**

<b>Status Code</b>	<b>Description</b>	<b>Recommended Action</b>
77	During initialization, the data size expected by the device does not match the scan list entry.	Use RSNetWorx for DeviceNet software to check the slave device and the scan list for the correct input and output sizes for the slave device.
78	The device is configured in the scan list, but not communicating. The device has failed to communicate during the scanner's second scan, which followed the display of status error code 72.	Verify device's power and communication connections. If the device is polled, make sure the interscan delay is long enough for the device to return its data. If necessary, use RSNetWorx for DeviceNet software to do the following: <ul style="list-style-type: none"> <li>• Add the device to the DeviceNet network.</li> <li>• Delete the device from scanner's scan list.</li> <li>• Inhibit the device in the scanner's scan list.</li> </ul>
79	The scanner has failed to transmit a message. The error status usually displays after the duplicate node check completes and power is applied to the module.	<ul style="list-style-type: none"> <li>• Make sure the scanner is connected to a valid network.</li> <li>• Check for disconnected cables.</li> <li>• Verify the network communication rate.</li> </ul>
80	The scanner is in Idle mode.	To run the network, do these steps. <ol style="list-style-type: none"> <li>1. Put the controller in Run or Remote Run mode using the keyswitch on the controller or through RSLogix5000 software.</li> <li>2. Turn on the bit O.CommandRegister and run for the scanner.</li> </ol>
81	The controller has set the scanner to the Faulted mode. The Command bit also indicates a DeviceNet network fault state.	The Bit O.CommandRegister.Fault for the scanner is on. Correct the condition that caused the controller to set this bit and then turn this bit off.
82	An error was detected in a sequence of fragmented I/O messages from the device.	Use RSNetWorx for DeviceNet software to do the following: <ul style="list-style-type: none"> <li>• Check the scan list of the device to make sure that its input and output data sizes are correct.</li> <li>• Check the configuration of the device.</li> </ul>
83	The device returns error responses when the scanner attempts to communicate with it.	Use RSNetWorx for DeviceNet software to do the following: <ul style="list-style-type: none"> <li>• Check the accuracy of the scan list.</li> <li>• Check the configuration of the device. The device may be in another scanner's scan list.</li> <li>• Use the slave device's documentation to verify that the device supports the message type used by the scanner. If the device's message type does not match the scanner's, then use RSNetWorx for DeviceNet software to access the scanner's scan list and change the scanner's message type to one that is compatible with the slave device.</li> <li>• Cycle power to the device.</li> </ul>
84	The scanner is initializing the DeviceNet network.	None. This code clears itself once the scanner attempts to initialize all the devices on the network.
85	During runtime, the data size sent by the slave device does not match the size in the corresponding scan list entry.	Since variable length poll data is not supported, verify that the slave device is functioning properly.
86	The device is in Idle mode, or not producing data, while the scanner is in Run mode.	<ul style="list-style-type: none"> <li>• Check the configuration and status of the device.</li> <li>• If you set up an interlock between two scanners (controllers), make sure both scanners are in Run mode.</li> </ul>
87	The scanner cannot listen to shared inputs from the slave device because the owning scanner has not established communication with that slave device.	<ul style="list-style-type: none"> <li>• Verify the primary scanner connection and configuration.</li> <li>• Verify that the slave device is producing data.</li> </ul>
88	The scanner cannot listen to shared inputs from the slave device because I/O parameters, such as electronic key or data size, for that slave device are configured differently between this scanner and the owning scanner.	In this scanner, reconfigure the I/O parameters for the shared inputs scan list entry so that they match those same parameters in the owning scanner.

**Table 14 - Status Codes**

Status Code	Description	Recommended Action
89	The scanner failed to configure a device by using the Automatic Device Recovery (ADR) parameters.	<ul style="list-style-type: none"> <li>• Make sure that you installed a compatible device.</li> <li>• If the offline configuration of the device does not match the actual (online) configuration of the device, change the offline configuration to match the online configuration.</li> </ul>
90	The controller has set the scanner to Disabled mode.	If desired, enable the scanner by locating the O.CommandRegister.DisableNetwork bit on the command register and turning it off.
91	Indicates a Bus-off condition likely due to cable or signal errors.	<ul style="list-style-type: none"> <li>• Cycle power to the device.</li> <li>• Verify that all devices are set to the same communication rate.</li> <li>• Check DeviceNet cabling to make sure no short circuits exist between CAN (blue and white) wires and power or shield (black, red, and shield) wires.</li> <li>• Check the media system for these noise sources: <ul style="list-style-type: none"> <li>– Close proximity to high-voltage power cable</li> <li>– Incorrect or no termination resistor</li> <li>– Improper grounding</li> <li>– Noise produced from another device on the network</li> <li>– Incorrect data for the network</li> </ul> </li> </ul>
92	The DeviceNet cable is not supplying power to the device's communication port.	<ul style="list-style-type: none"> <li>• Verify that the network's 24V DC power supply is operating properly.</li> <li>• Verify the cable is in good condition.</li> <li>• Check the cable connections to the device.</li> </ul>
95	A device's firmware is being updated or a configuration is being downloaded.	None. Do not disconnect the device while the update is in process because existing data in the device memory will be lost.
96	The communication port is in Test mode.	None.
97	The controller has placed the scanner in Halt mode.	If the O.CommandRegister.HaltScanner bit is on, turn it off. Then cycle scanner power.
98	General firmware error.	Replace device.
99	System failure.	Replace device.

## 1769-SDN Scanner Data Structures

The scanner uses the input and output data images to transfer data, status, and command information between the scanner and the controller.

### Input Data Image

The input data image is transferred from the scanner module to the controller.

Word	Description	Data Type
0...63	Status Structure	64-word array
64 and 65	Module Status Register	2 words
66...245	Input Data Image	180-word array

## Output Data Image

The output data image is transferred from the controller to the scanner module.

Word	Description	Data Type
0 and 1	Module Command Array	2-word array
2...181	Output Data Image	180-word array

The following table shows the bit descriptions for the module's command array.

Word	Bit	Operating Mode
0	0	1 = Run, 0 = Idle
	1	1 = Fault
	2	1 = Disable Network
	3	Reserved <sup>(1)</sup>
	4	1 = Reset
	5...15	Reserved <sup>(1)</sup>
1	0...15	Reserved <sup>(1)</sup>

(1) **Do not** manipulate reserved bits. Doing so may interfere with future compatibility.

## CompactLogix Status Structure

The second area of the CompactLogix controller input image is the Status Structure. The status structure consists of these data elements.

Description	Data Type
I.Status.Scan Counter	2 words
I.Status.Device Failure Register	64-bit array
I.Status.Autoverify Failure Register	64-bit array
I.Status.Device Idle Register	64-bit array
I.Status.Active Node Register	64-bit array
I.Status.Status Display	8 bytes
I.Status.Scanner Address	1 byte
I.Status.Scanner Status	1 byte
I.Status.Scrolling Device Address	1 byte
I.Status.Scrolling Device Status	1 byte
I.Status.Device Status	64 bytes







## Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products.

At <http://www.rockwellautomation.com/support/>, you can find technical manuals, a knowledge base of FAQs, technical and application notes, sample code and links to software service packs, and a MySupport feature that you can customize to make the best use of these tools.

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

## Installation Assistance

If you experience a problem within the first 24 hours of installation, review the information that is contained in this manual. You can contact Customer Support for initial help in getting your product up and running.

United States or Canada	1.440.646.3434
Outside United States or Canada	Use the <a href="#">Worldwide Locator</a> at <a href="http://www.rockwellautomation.com/support/americas/phone_en.html">http://www.rockwellautomation.com/support/americas/phone_en.html</a> , or contact your local Rockwell Automation representative.

## New Product Satisfaction Return

Rockwell Automation tests all of its products to ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned, follow these procedures.

United States	Contact your distributor. You must provide a Customer Support case number (call the phone number above to obtain one) to your distributor to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for the return procedure.

## Documentation Feedback

Your comments will help us serve your documentation needs better. If you have any suggestions on how to improve this document, complete this form, publication [RA-DU002](#), available at <http://www.rockwellautomation.com/literature/>.

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