

# Getting Started

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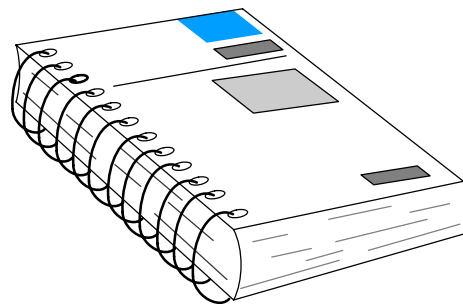
## In This Chapter. . . .

- Introduction
  - Introduction to DeviceNet
  - General Information About D0-DEVNETS
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## Introduction

### The Purpose of this Manual

This manual describes the installation and operation of the D0-DEVNETS Slave Module (D0-DEVNETS).



### Supplemental Manuals

The following manuals are essential for the proper use of your DL05 DeviceNet Slave Module.

- DL-05 Micro PLC User Manual part number **D0-USER-M**  
This manual contains very important information, including a complete I/O Module Memory Map. The Memory Map is crucial in designing and implementing the I/O system.
- The PLC/PC software manual
- The DeviceNet software (if separate) manual
- The DeviceNet Scanner (or Master) manual

### Who Should Read this Manual

If you have a working knowledge of the DeviceNet network, the DeviceNet software and PLC or PC which you are using, this manual will help you configure and install your D0-DEVNETS Slave Module.

### Technical Support

We strive to make our manuals the best in the industry and rely on your feedback in reaching our goal. If you cannot find the solution to your particular application, or, if for any reason you need additional technical assistance, please call us at

**770-844-4200.**

Our technical support team is glad to work with you in answering your questions. They are available **weekdays from 9:00 a.m. to 6:00 p.m. Eastern Time**. We also encourage you to visit our website where you can find technical and nontechnical information about our products and our company.

**[www.automationdirect.com](http://www.automationdirect.com)**

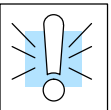
## Conventions Used



The “light bulb” icon in the left-hand margin indicates a **tip** or **shortcut**.



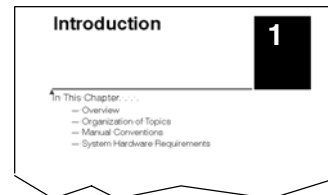
The “note pad” icon in the left-hand margin indicates a **special note**.



The “exclamation mark” icon in the left-hand margin indicates a **warning** or **caution**. These are very important because the information may help you prevent serious personal injury or equipment damage.

## Key Topics for Each Chapter

The beginning of each chapter will list the key topics that can be found in that chapter.



## Introduction to DeviceNet

DeviceNet is a low-cost control bus used to connect field devices to PLCs and PCs. DeviceNet is designed to reduce the need for hard-wiring while providing device-level diagnostics. There are a host of manufacturers of DeviceNet products, offering an array of products including sensors, motor drives and starters, PLCs, pushbuttons, remote I/O systems, etc.

### DeviceNet Concepts

Here are some DeviceNet concepts you may find helpful.

- DeviceNet supports various communication structures including Peer to Peer, Multi-master and Master/Slave. *The D0-DEVNETS uses the predefined Master/Slave connection.*
- DeviceNet has two types of messaging: Explicit Messaging and I/O Messaging.
  - Explicit Messaging is low priority, not time-critical and usually for configuration/diagnostic purposes.
  - I/O Messaging is time-critical and high priority for I/O data transfer. I/O Messaging comes in four types:
    - Strobed
    - Polled (*The D0-DEVNETS only supports Polled.*)
    - Change of State (or COS)
    - Cyclic
- A single DeviceNet network is limited to 64 nodes. A node can be a single-bit device, such as a limit switch, or a remote I/O slave with several I/O modules, such as the D0-DEVNETS. The Master (Scanner) is usually assigned to node address 0, and many Slave devices have a factory default node address of 63.
- DeviceNet has the following data rates (with maximum bus lengths):
  - 125 kbps (bus length = 500m max.)
  - 250 kbps (bus length = 250m max.)
  - 500 kbps (bus length = 100m max.)
- The 24V DeviceNet power supply must be grounded at only one point. The V- terminal must be connected to Protective Earth Ground at the power supply only.

### The ODVA

The DeviceNet standard is maintained by the ODVA (Open DeviceNet Vendor Association, Inc.). Contact the ODVA for detailed information about DeviceNet.

Open DeviceNet Vendor Association, Inc.

20423 State Road 7

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Boca Raton, FL 33498

Phone: (954) 340-5412

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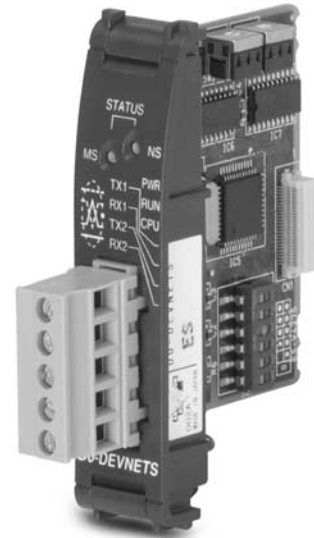
**Internet:** [www.odva.org](http://www.odva.org)

Email: [odva@powerinternet.com](mailto:odva@powerinternet.com)

## General Information about the D0-DEVNETS

The D0-DEVNETS slave module offers the following features:

- The D0-DEVNETS installs into any of the DL05 PLC's option slot. The PLC must have firmware version 3.0 or higher installed.
- The D0-DEVNETS can be installed in any of the four option slots of the DL06 PLC. The PLC must have firmware version 1.0 or higher installed.
- Only one D0-DEVNETS can be installed in the DL06 PLC.
- The D0-DEVNETS is an interface for DeviceNet (slave mode only).
- The D0-DEVNETS collects and reports all discrete I/O data to a DeviceNet master as polled data.
- The D0-DEVNETS does not poll analog I/O data, the analog I/O is looked at in registers. Refer to the **D0-DEVNETS-M** pointer method setup for the analog module being used.
- The D0-DEVNETS can either be configured in the DL05/06 for slave I/O mode without the need for a ladder program or programmed with ladder control logic as part of a network.
- LEDs for the Module Status and Network Status.
- Node address switches are easily accessed.



### Specifications

Environmental specifications for the D0-DEVNETS are the same as for the DL05/06 PLCs. UL and CE approvals are pending. See Appendix A for detailed specifications.

### Mini Glossary

Below is a small glossary of terms used in this manual.

#### Scanner or Master

The DeviceNet Master of which the D0-DEVNETS is a slave. This can be either a PLC module or a card in your PC.

#### Adapter or Slave

Short for the D0-DEVNETS Slave Module. The adapter is also referred to as a Network Interface Module elsewhere.

#### Node Address or MAC ID

The unique device address on a DeviceNet network. There are a maximum of 64 total (0-63). Usually the scanner is node 0.