

# Getting Started

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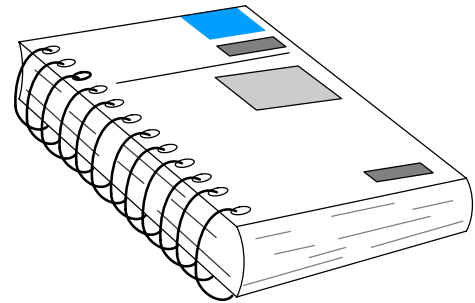
## In This Chapter. . . .

- Introduction
- Introduction to DeviceNet
- DL205 I/O System
- F2-DEVNETS-1 DeviceNet Base Controller

## Introduction

### The Purpose of this Manual

This manual describes the installation and operation of the F2-DEVNETS-1.



### Supplemental Manuals

The following manuals are essential to the proper use of your F2-DEVNETS-1.

- *DL205 Installation and I/O Manual* part number **D2-INST-M**
- 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 F2-DEVNETS-1 DeviceNet Base Controller.

### Technical Support

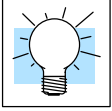
We strive to make our manuals the best in the industry and rely on your feedback in reaching our goal. If you cannot find the solution to your particular application, or, if for any reason you need additional technical assistance, please call us at

**1-800-783-3225**

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.facts-eng.com](http://www.facts-eng.com)**

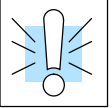
## Symbols Used



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



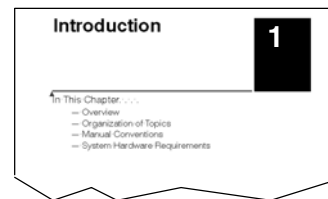
The “note pad” icon in the left-hand margin indicates a **special note**.



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-level network designed to connect factory-floor devices to control systems. There are a host of manufacturers of DeviceNet products, offering an array of products including sensors, motor drives and starters, PLCs, pushbutton stations, 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 F2-DEVNETS-1 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 F2-DEVNETS-1 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 F2-DEVNETS-1. 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 tied 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

Suite 499

Boca Raton, FL 33498

Phone: (954) 340-5412

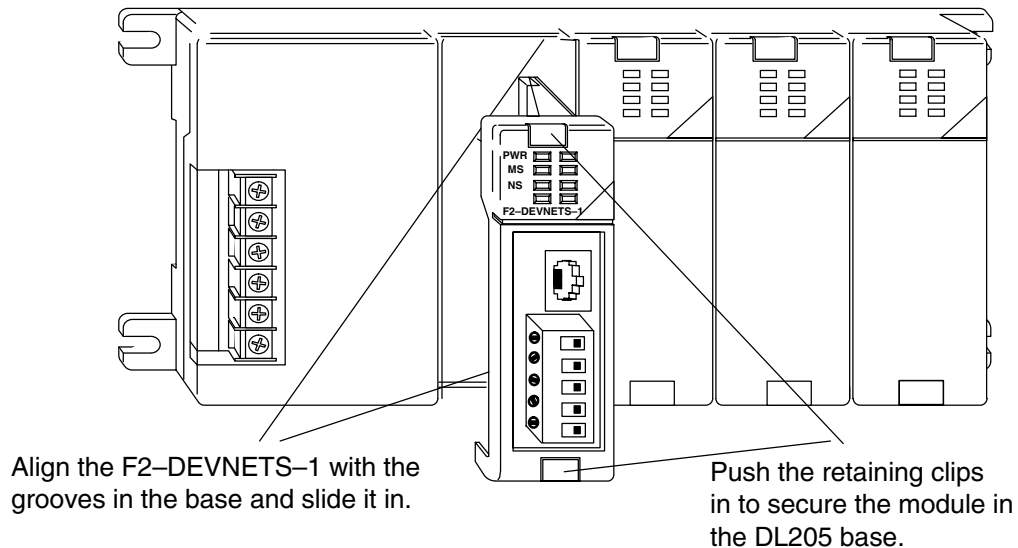
Fax: (954) 340-5413

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

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

## DL205 I/O System

Each 205 I/O system has the following components: a Power Supply/Base, CPU or Interface Module, and one or more I/O Module(s).



### Mini Glossary

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

#### Scanner or Master

The DeviceNet Master of which the F2-DEVNETS-1 is a slave. This can be either a PLC module or a card in your PC.

#### Controller or Slave

Short for the F2-DEVNETS-1 Base Controller. The controller 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.

## F2-DEVNETS-1 Base Controller

The F2-DEVNETS-1 Base Controller is a slave module that functions as a controller for 205 I/O on a DeviceNet network.

### F2-DEVNETS-1 Base Controller Features

The Controller has the following features:

- Status LEDs (Power, Module and Network)
- Serial Port
- Node Address (MAC ID) and Baud Rate Jumpers
- DeviceNet Connector

