DeviceNet™

Selection Guide

Allen-Bradley
RELIANCE ELECTRIC
DODGE
ROCKWELL SOFTWARE

Rockwell Automation

Bringing Together Leading Brands in Industrial Automation

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Introduction to DeviceNet

DeviceNet is a low-cost communication link to connect industrial devices (such as limit switches, photoelectric sensors, valve manifolds, motor starters, push buttons, bar code readers, variable frequency drives, panel displays, and operator interfaces) to a network and eliminate time-consuming and costly hard wiring. A DeviceNet network is positioned on the device level of a network hierarchy. This allows for a reduction in wiring and installation costs. The direct connectivity provides improved communication between devices as well as important device-level diagnostics not easily accessible or available through hard wired I/O interfaces.

The NetLinx™ Philosophy

The future demands advanced network technology, greater system performance, and higher productivity. Rockwell Automation has designed a common communication protocol and interfaces for networks that connect the plant-floor device all the way to the Internet. This architecture, referred to as NetLinx, takes advantage of readily available producer/consumer networking services and standard hardware and software interfaces. The NetLinx architecture brings you advanced communication features, flexibility, and performance when you need them.

Rockwell Automation brings you Rockwell Software and Allen-Bradley brand products that work with the NetLinx open network architecture, consisting of the EtherNet/IP, ControlNet, and DeviceNet networks. The ability to integrate these networks together into a system offers these benefits:

- networks that are best suited to an application
- a common architecture for control, configuration and collection of plant-floor information
- the ability to control, configure ,and collect data on the same network
- seamless integration between networks due to the common NetLinx architecture
- data accessibility to all devices-- any time, any place
- improved system performance and lower total cost of ownership

Producer/Consumer and DeviceNet

The DeviceNet network is based on the producer/consumer network model, the latest in network technology. This technology allows for real-time control data exchange, configuration capabilities exclusive

from control performance, and collection of data at regular intervals or on-demand.

Producer/consumer is better because:

- multiple nodes can consume the same data at the same time from a single producer
- nodes can be easily synchronized for more precise system performance
- devices can communicate autonomously—no need for a system master

On producer/consumer networks, packets are identified by content rather than an explicit destination. If a node needs the packet, it will accept the identifier and consume the packet. So the source sends that packet once and all the nodes consume the same packet if they need it. This breakthrough brings you:

- increased efficiency because data is produced once, regardless of the number of consumers
- precise synchronization because data arrives at each node at the same time

Using this Publication to Plan Your Network

This publication is designed to help you plan your DeviceNet network. Basically, you will do this using five steps. These steps are:

- Laying out your system, based on your requirements
- Placing your required devices into definable groups, or identifying how you can cluster your devices
- Determining your network components
- Choosing your platform
- Recording your choices in a bill of materials

This publication is divided into sections to assist you with choosing DeviceNet system components. To understand how to use this publication, refer to the tabbed chart on page 17.

Laying Out Your System

The most important items for this first step are a pencil and paper. When you begin network planning, it is best to simply start by drawing up a sketch of your future network. When doing so, ask yourself these questions:

- What type of devices do I need? (Example: sensors, actuators, controllers, drives, operator interfaces)

- What will be the approximate distances between devices, and where will they be physically located?
- How many inputs/outputs do I need?

Label all of the devices and distances in your drawing. By keeping your sketch detailed, you will be able to select devices more easily later on in the network development process.

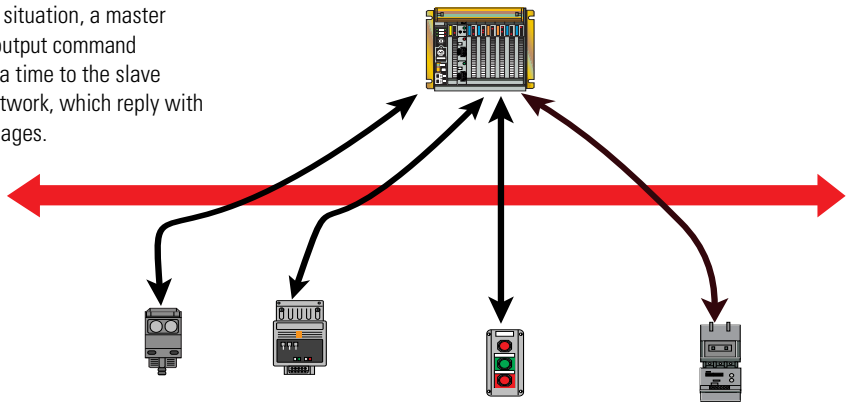
Types of DeviceNet Systems

All Rockwell Automation controller interfaces on DeviceNet provide mechanisms for data sharing with other controllers.

Because DeviceNet follows the producer/consumer model, it makes data accessible to every component of the system, simultaneously, providing more efficient use of network bandwidth. This gives you network set-up flexibility. You can set-up your network for master/slave, multi-master/slave, peer-to-peer or any combination.

Traditionally, networks are set up in master/slave mode. *Master* devices (typically PLCs) are used to control secondary devices (slave devices). On a communication link, it is the master device that can initiate communication. *Slave* devices, therefore, are the devices that collect the command messages from a master device. Unlike master devices, slave devices cannot initiate any form of command messages. They simply reply to the messages sent from the master.

In a master/slave situation, a master controller sends output command messages one at a time to the slave devices on the network, which reply with input status messages.

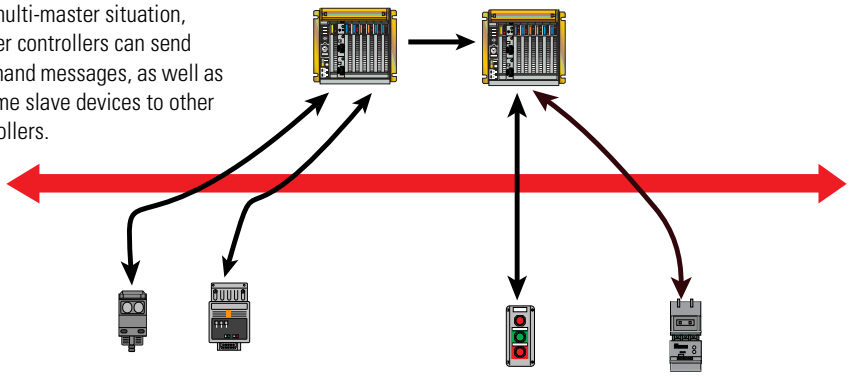


Multi-master/slave mode can be configured as follows:

- you can have an unlimited number of masters in a system
- a master can act as a slave to another master

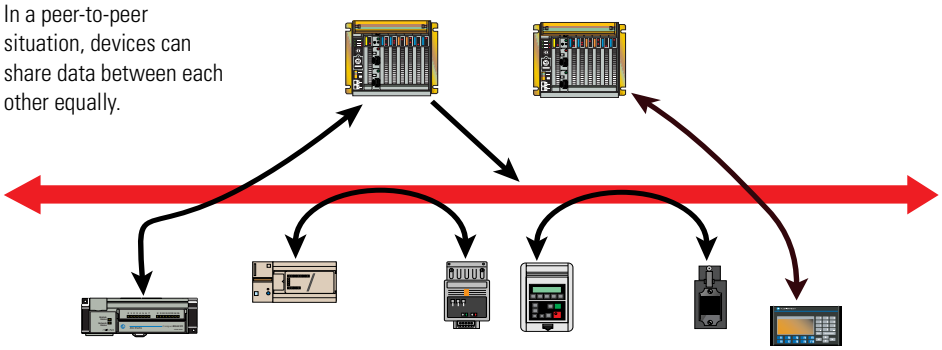
You can choose this configuration to take advantage of DeviceNet's flexibility over traditional networks in implementing master/slave and peer-to-peer communication.

In a multi-master situation, master controllers can send command messages, as well as become slave devices to other controllers.



Peer-to-peer configurations allow messages to be exchanged between devices on an equal basis. Unlike master/slave mode, peer-to-peer allows any device to initiate communication with another device when it has the need to communicate.

In a peer-to-peer situation, devices can share data between each other equally.



Placing Devices into Definable Groups

The second step toward building your network is recognizing the groups of devices you will be using. For example, if you require photoelectric sensors and limit switches, you could group these two device types into one group called sensors. Another example is creating an operator interfaces group which could include tower lights, hand-held configurators, and electronic operator interfaces. By creating groups such as these, you will be better able to find the

devices you need in this publication, and in other DeviceNet publications.

Determining Your Network Components

This publication is your tool for selecting Rockwell Automation DeviceNet products. At this point, you can use your network sketch, and defined device groups to search through this publication for the appropriate DeviceNet devices.

The DeviceNet Assistant software provides you with a graphical representation of your DeviceNet network as you choose your network components. You can use this helpful software with this publication for a detailed look at your future network. A free download of the software is located at: http://www.ab.com/networks/assistant/.

You will determine which network devices you need based on a few criteria. Listed below are some items you may want to consider.

- Costs/acquisition costs
- Installation costs and logistics
- Diagnostic needs
- Smart devices vs. I/O
- Open-style or sealed devices
- Round vs. flat media

Here are specific questions which will help you determine what type of network your application needs, and which components will help you build that network.

1. What type of DeviceNet system are you planning?

All Rockwell Automation controller interfaces on DeviceNet provide mechanisms for data sharing with other controllers.

Master/Slave	Multi-master/Slave	Peer-to-Peer
Logic programming is simplified	Logic located in more than one controller	Logic located in multiple devices
All logic located in a single controller	Communications initiated by more than one controller	Communications initiated by multiple devices
Communications initiated by single controller	Input data can be shared by controllers	

2. Are you planning on using classic I/O devices, smart I/O devices or a mix?

Classic I/O	Smart I/O Devices
Acquisition costs are lower	Diagnostics and data from devices increases
Number of nodes per network is lower	Hardwiring is minimal
Diagnostics are minimal	Life-cycle is lower due to preserved uptime

A Word About I/O Messaging

Leveraging the producer/consumer model, DeviceNet allows you to select between four methods of I/O exchange on a per-device basis:

- Cyclic
- Polled
- Change-of-state
- Strobed (Multicast)

If you desire precise data delivery, *cyclic* I/O messaging is ideal. This precise data delivery allows users to program a device to send messages to master devices at specific defined rates, such as 10 ms, 50 ms, 200 ms, etc. Cyclic I/O is also appropriate for devices with slowly changing data (e.g., analog I/O measuring temperature).

Change-of-state messaging (COS) is a fast type of I/O control messaging that programs a device to send its data only when there is a change in the device's state. For example, a photoelectric sensor will send an input message to a controller only when it detects an object in front of it; otherwise, no message will be sent to the master controlling device. Most change-of-state devices also support a cyclic message called "heartbeat". With the heartbeat, devices will send status on a user-defined cyclic basis.

Traditionally, networked devices are programmed for polled I/O messaging. This type of messaging requires a slave device to send a message only when a master device asks. Polled I/O messaging is the traditional method of I/O exchange. Master devices poll each slave device one at a time to exchange input and output data.

Some DeviceNet devices, such as controllers, have the capability to generate one data message, which is then delivered to multiple devices simultaneously. This type of messaging, *strobe I/O messaging*, allows master devices to gather input status from multiple DeviceNet slave devices quickly.

In addition, input data (regardless of I/O exchange method) can be shared between multiple controllers. Shared I/O is a feature supported by some master/controller devices. Basically, a single input message (cyclic, change-of-state, polled, or strobed) from a device can be consumed by more than one controller. This efficient form of sharing data reduces the quantity of messaging on the network; thereby, improving overall system performance. Also, this enables you to better synchronize action between controllers because they receive input data simultaneously. This feature is only applicable to input data. Output data to devices must come from only one controller.

3. What type of physical media do you plan to use?

Round	Flat
Installation is quick where device locations are known	Device/node location is flexible
System can be built in multiple sections	Quickest to install where device location is random
Overall achievable distances are longer	Engineering and designing are easier

Choosing Physical Media

TIP

Planning your physical media is an important step. To help you take this task further than discussed in this publication, refer to the DeviceNet Cable Planning and Installation Guide, publication DN-6.7.2.

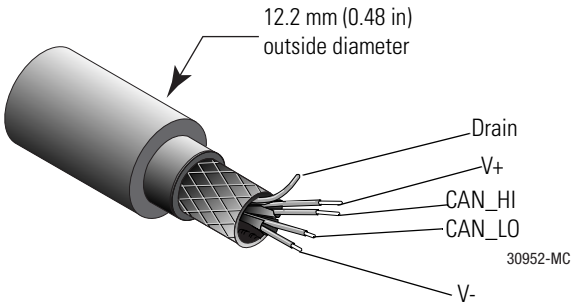
There are two types of DeviceNet media: Round and Flat.

Round media - consists of two twisted pair wires (24V dc power and signal) plus drain in one cable. Round media comes in both thick (12 mm diameter) and thin (7mm diameter) sizes. Round media is typically used when:

- distances between devices (nodes) are known and fixed
- greater overall distance is required (see chart on page 9.)
- daisy-chaining devices at the trunk (i.e., no droplines) is preferred

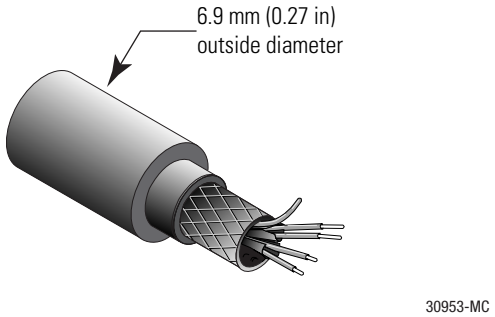
Thick Media

- Current rating (maximum): 8 Amps
- NEC Class 2: 4A (US and Canada only)
- Gray PVC jacket with overall mylar tape aluminum/polyester shield
- 65% coverage tinned copper-braid shield



Thin Media

- Current rate (maximum.): 3 Amps
- Yellow chemical resistant CPE jacket overall mylar tape
- 65% coverage tinned copper-braid shield

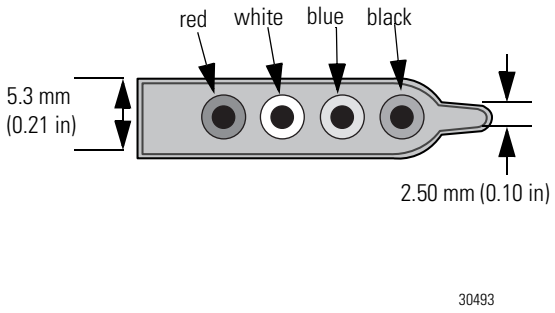


Flat media - consists of two pair wires (24V dc power and signal). Flat media typically is used when:

- distances between devices are less known and/or may change
- all wiring will be performed on-site
- future additions are anticipated

Flat Media

- Current rating (maximum.): 8 Amps
- NEC Class 2: 4 Amps (US and Canada only)
- Class 1 jacket material: gray TPE
- Class 2 jacket material: gray PVC
- Auxiliary Power (for MaXum ArmorBlock I/O) jacket material: black PVC



Wire Color	Wire identity	Use	Flat
white	CAN_H	signal	signal
blue	CAN_L	signal	signal
bare	drain	shield	n/a
black	V-	power	power
red	V+	power	power

Keep These Physical Media Specifications in Mind

DeviceNet can operate at three different data rates: 125Kb, 250Kb, and 500Kb. The overall maximum length of your DeviceNet network depends on the data rate and cable type selected. Use the chart below.

Data Rates	Max. Trunk Length (thick)	Max. Trunk Length (thin)	Max. Trunk Length (flat)	Drop Line Budgets (max. 20 ft [14.6m]per drop)
500 Kbps	100 meters (328 ft)	100 meters (328 ft)	75 meters (246 ft)	39 meters (128 ft)
250 Kbps	250 meters (820 ft)	100 meters (328 ft)	200 meters (656 ft)	78 meters (256 ft)
125 Kbps	500 meters (1640 ft)	100 meters (328 ft)	420 meters (1378 ft)	156 meters (512 ft.

Keep these points in mind:

- longer distances are possible with bridges (You can contact your Rockwell Automation representative for details.)
- individual drop lines: 0-6 meters (20 ft) each. Drop line budgets refer to the total sum of the lengths of each drop line in your DeviceNet network.

DeviceNet includes a power pair of wires. The 24V dc power is required for each device to control its transceiver for communication. Also, some devices (such as sensors, pilot lights, etc.) can use DeviceNet as its power source. Therefore, every device connected to DeviceNet will consume some level of power (x current at 24V dc). The current draw from all devices will dictate both the number and size of required power supplies. Devices can be added or removed

while the system power is on. Refer to Appendix A of publication DN-6.7.2 for more information on current draw.

4. What type of connections do you need for the environment your network is in?

Sealed	Open-Style
Perfect when devices are exposed to the environment	Use when devices are installed in protective enclosures
Time and installation savings	Acquisition cost savings
Risk of miswiring is reduced	Good for simple daisy-chaining connectivity to multiple devices

The DeviceNet network uses two types of connectors: unsealed, or open-style, and sealed. Unsealed connectors are low cost and typically used for in-panel devices. Sealed connectors are typically used in harsh environments.

You can mix unsealed and sealed connectors on the same DeviceNet system.

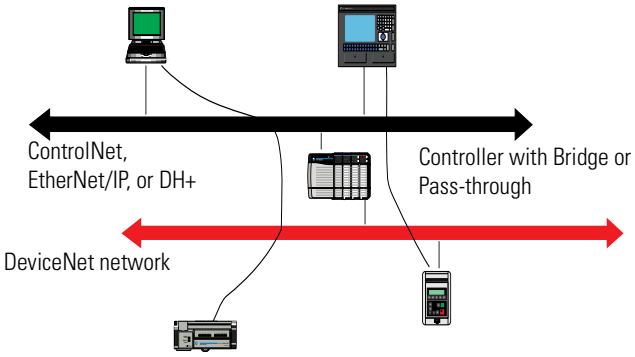
5. Are you planning a stand-alone DeviceNet network, or one that is part of a larger architecture?

6. Do you desire bridging capabilities to other networks, such as EtherNet/IP, Data Highway Plus, DH-485, or ControlNet?

Rockwell Automation solutions include ControlLogix (modular approach), RSLinx Gateway (PC approach), and the ControlNet to DeviceNet Linking Device (an economical approach).

Multi-level Bridging and Pass-through Capabilities: You can collect data from or configure devices on multiple DeviceNet systems from higher-level networks, such as ControlNet™, Data Highway Plus, or EtherNet/IP. Use this feature to configure your DeviceNet devices

on multiple networks from one location. Also, use this for MMI data collection during run-time.



You may also want to ask yourself these questions:

- Will you be using an Allen-Bradley controller as part of your DeviceNet system? If yes, go to page B-1.
- Will you require direct connectivity to DeviceNet using a PC for device configuration, monitoring, or troubleshooting? If yes, go to page L-1.

Selecting RSNetWorx Software for DeviceNet Configuration

You need RSNetWorx for DeviceNet to configure parameters and commission nodes. RSNetWorx uses Electronic Data Sheet (EDS) files to understand the capabilities of a device. If an Electronic Data Sheet (EDS) file is not included with the copy of RSNetWorx you are using, you can download it from www.ab.com/Networks/eds.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

Choosing Your Platforms

At the end of this introduction is a diagram which has been designed to help you navigate through this publication faster. Each component type is matched with the corresponding tabbed section label for the appropriate product family section in this publication. Turn to a particular product family section to locate the devices that fit your needs. The introduction to each product family contains information which will help you choose the appropriate platform for the devices

you need. Always read the introduction to each product family. It will save you time when beginning to choose devices.

Recording Your Choices in a Bill of Materials

The final step in creating your network is to select the devices from each product family and record their catalog information in the bill of materials form in the back of this publication. After selecting a device, return to the flowchart in this introduction, and choose another product family. Continue to repeat the selection process, again using the bill of materials. See the sample bill of materials below.

Once completed, you can fax or send the bill of materials form to your local Rockwell Automation sales office or authorized distributor, and your network materials will be packaged for you. You can repeat this process until you have determined all of the elements needed to build the network of your choice.

Sample Bill of Materials

Catalog Number	Description	Qty	DeviceNet Current Draw
	Control Platform:		
	Controller Type:		
1771-SDN	PLC/SLC/Logix-based Controller	1	90 mA per channel
	PC-based Controller		
	Network Interface:		
1784-PCD	PC Interface	1	210 mA
	Operator Interface		
9357-DNetL3	**Configuration Software:** RSNetWorx for DeviceNet		
	I/O:		
1791D-8B8P	Packaged I/O	10	100 mA x 10 = 1000 mA
	Modular I/O		
	Sensors:		
42GNU-9010	Series 9000 Sensor	10	30 mA x 10 = 300 mA
	Operator Interfaces:		

Catalog Number	Description	Qty	DeviceNet Current Draw
2711-T9C10	PanelView 900	1	150 mA
	Drives:		
1336F-BRF15AEENGM5	1336 PLUS II	4	60 mA x 4 = 240 mA
		Total Draw	1990 mA
	Media Types:		
1485C-P1E75	KwikLink Cable (100 ft. spool)	1	n/a
1485A-C5E4	Dust Cap	25	n/a

Additional DeviceNet Features

When you choose DeviceNet for your network option, you can also take advantage of these system and device features:

Automatic Device Replacement: Device configurations can be stored in a central location such as controller interface modules. With Automatic Device Replacement (ADR), if a device fails, you simply connect a matching new device. The configuration (including the node address) is automatically downloaded to the new device. There is no need for a PC or any tool to replace devices, allowing you to quickly bring your system back online.

Autobaud A device that supports autobaud means that the device can configure its data rate automatically (125Kb, 250Kb or 500Kb) when connected to an existing network. Many Rockwell Automation DeviceNet products support autobaud.

Configuration Consistency Value: Devices that support configuration consistency value allow other devices (such as controllers or PC tools) to quickly compare the stored configuration and the one in the device. This is valuable for users who need to perform system audits.

Faulted Address Recovery: DeviceNet specifications require devices entering a new system to verify that their node address is unique. If another device in the system already occupies that node address, the new device is not allowed to enter the system. The user then has to disconnect the device and reconfigure the node address setting. Devices that support faulted node address recovery can remain in the system in an “inactive” state when a node address is not found. This allows the user to reconfigure the node address over the network, without disconnecting the device.

Auto-search for Vacant Address: A device that supports auto-address can, when connected to an existing network, search for an unused node address and use that address as one of its parameters. This feature is typically used with tools, such as a PCMCIA card in a laptop PC, which generally require a temporary connection to the network.

Tools for Designing Your Network

Rockwell is committed to providing you with the appropriate tools to build and maintain your DeviceNet system. Starter kits, hands-on seminars, and training are just some of the ways you can take the development of your DeviceNet system further. Please contact your local Rockwell Automation sales office or distributor for more information.

DeviceNet Starter Kits and Hands-on Seminars

DeviceNet Starter Kits help DeviceNet customers get started with DeviceNet quickly and easily. The kits include everything needed to set up a small DeviceNet network for tutorial purposes—all at a reasonable cost. You can also reuse the components in a real application.

Rockwell Automation has designed seminars, with hands-on labs, which can introduce you to the various DeviceNet products and services that may fit your needs.

DeviceNet Training Classes

Part of designing a successful DeviceNet network is learning the guidelines and principles that build a stable network. You can learn more about DeviceNet through the Rockwell Automation DeviceNet training courses. These classes give you a hands-on opportunity to explore DeviceNet products and services that may fit your needs.

DeviceNet Publications

DeviceNet Cable System Planning and Installation Manual (publication no. DN-6.7.2) - This manual is designed to help you plan and install a DeviceNet cable system. The manual describes the required components of the cable system and how to plan for and install these required components.

DeviceNet on the Web

The Rockwell Automation Networks website (**www.ab.com/networks**) provides you will a place to locate up-to-date information on DeviceNet as well as the other NetLinx-based networks, ControlNet and EtherNet/IP. This website provides you with a place to look up information on electronic data sheets (EDS), new Rockwell Automation products, developer's information, customer cases and testimonials, and various network publications.

Located on the Networks website is an extremely helpful development tool. The tool, **DeviceNet Assistant software**, allows you to plan and organize all of your network components, detailing the cable distance, trunk length, maximum voltage drop, maximum current usage, etc., all within a graphical user interface. This software is an excellent companion to this and other DeviceNet publications.

Notes:.

Choose Control Platform

- **PC-based Controllers** — A
- **PLC/SLC/Logix-based Controllers** — B
- **Linking Devices** — C

Choose I/O

- **Packaged I/O** — D
- **Modular I/O** — E

Choose Smart Devices

- **Sensors** — F
- **Operator Interfaces** — G
- **Power & Energy Management Solutions** — H
- **Motor Starters and Protectors** — I
- **Drives** — J
- **Motion Control** — K
- **PC Interfaces** — L

Choose Media — M

Notes:

PC-based Controllers

Rockwell Automation provides two PC-ready DeviceNet interfaces: a PCI bus scanner card, and a CompactPCI bus scanner card. These cards use RSLinx™ as their messaging application interface for software such as RSNetWorx™ for DeviceNet to monitor data, and configure networks and devices. These cards use IOLinx™ as their I/O application interface for software such as SoftLogix, custom Visual Basic programs, and custom Visual C++ programs.

- **DeviceNet PCI Bus 1784-PCIDS Scanner Card** - designed for the standard PCI bus used in the majority of PCs manufactured today. The card provides you with the capability to link your PC application to the DeviceNet network.
- **DeviceNet CompactPCI Bus 1784-CPCIDS Scanner Card** - this is a DeviceNet interface card designed for a variety of industrial applications. This is the first DeviceNet card for the CompactPCI bus.

DeviceNet PCI Bus 1784-PCIDS Scanner Card

With the Rockwell Automation DeviceNet PCI Bus 1784-PCIDS Scanner Card, you can link your application to any DeviceNet network with ease. Because this card uses the standard PCI bus found in the majority of computers manufactured today, you can use it with almost any computer. If you require general programming, configuration, and monitoring capabilities via an industrial workstation or desktop computer with a PCI bus architecture, this is the card for you.

DeviceNet CONFORMANCE TESTED

DeviceNet Features and Benefits

- support for explicit messaging
- I/O support for messaging
- support for all DeviceNet standard baud rates
- support for master/slave communication

Product Features and Benefits

- a small size, PCI “short” card (much smaller than a half-size PCI card)
- a high-speed 40MHz AMD AM1186EM-40 processor
- a 128K RAM, 8K shared host memory interface
- support for Auto Device Replacement (ADR)
- the ability to write your own logic in Visual Basic, C++, or other languages using the IOLinx standard API
- the ability to write your own data collection application in Visual Basic, C++, or other languages, using the RSLinx standard API
- direct integration into Rockwell Automation’s SoftLogix 5 and SoftLogix 5800 PC-based controllers
- software drivers that support single or multiple cards in the same PC
- software flash upgrades for support enhancements
- DeviceNet connectivity for RSLinx and RSNetWorx for DeviceNet
- drivers for Windows NT and Windows 2000

DeviceNet Details

Feature	1784-PCIDS
Explicit Messaging	Yes
I/O Messaging	Yes
Faulted Address Recovery	No

Feature	1784-PCIDS
Baud Rates Autobaud Auto Device Replacement	125Kb, 250Kb, 500Kb No Yes
Master/Scanner	Yes
I/O Slave Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes Yes
Power Requirements PC DeviceNet	 5V @ 625 mA max 24V dc @ 90 mA max
I/O Data Size	In: 2048 bytes Out: 2048 bytes

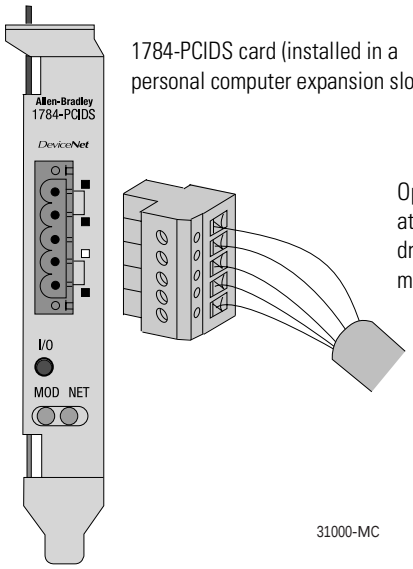
Configuration Information

Configure	By using
Baud Rates, Node Addresses and Scan List	RSNetWorx for DeviceNet

A

Physical Connection

You need the following components to connect a 1784-PCIDS card to a DeviceNet network.



Related Publications

Title	Publication Number
DeviceNet PCI Bus 1784-PCIDS Scanner Card Data Sheet	NETS-SP009B-US-E
DeviceNet PCI Communication Interface Card Installation Instructions	1784-IN004B-EN-P
DeviceNet PCI Communication Interface Card User Manual	1784-6.5.30
IOLinx SDK Data Sheet	NETS-SP010C-US-E

Ordering Information

Follow the steps below to order the 1784-PCIDS DeviceNet Scanner Card:

1. Order the DeviceNet Scanner with this catalog number:

Description	Catalog Number
DeviceNet PCI Bus 1784-PCIDS Scanner Card	1784-PCIDS

2. In addition to ordering your Scanner Card, order RSNetWorx for DeviceNet for configuration purposes:

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. You can also order the IOLinx Software Development Kit (SDK) or SoftLogix Software-based Control Systems to monitor and control your processes.

Description	Catalog Number
IOLinx SDK	9230-IOLINXSDK
SoftLogix 5 Software-based Control System Unlimited channels 1 channel 2 channel	 1789-SL5 1789-SL51 1789-SL52
SoftLogix5800 Software-based Control Systems SoftLogix5860 (16-slot) SoftLogix5830 (5-slot) SoftLogix5810 (2-slot)	 1789-L60 1789-L30 1789-L10

4. Record your selection in the bill of materials on page BOM-1.

A

DeviceNet CompactPCI Bus 1784-CPCIDS Scanner Card

The DeviceNet CompactPCI Bus 1784-CPCIDS Scanner Card contains embedded I/O scanner functionality so you can use it with soft-control or embedded-control engines. If you require plug-and-play configuration and high performance via an industrial workstation or desktop computer with a CompactPCI bus architecture, this card is an excellent choice.

DeviceNet Features and Benefits

- support for explicit messaging
- support for I/O messaging
- support for all DeviceNet standard baud rates
- support for master/slave communication

Product Features and Benefits

- a small size, CompactPCI bus form factor
- a high-speed 40MHz AMD AM1186EM-40 processor
- a 128K RAM, 8K shared host memory interface
- support for Auto Device Replacement (ADR)
- the ability to write your own logic in Visual Basic, C++, or other languages using the IOLinx standard API
- the ability to write your own data collection application in Visual Basic, C++, or other languages, using the RSLinx standard API
- direct integration into Rockwell Automation's SoftLogix 5 and SoftLogix 5800 PC-based controllers
- software drivers that support single or multiple cards in the same PC
- software flash upgrades for support enhancements
- DeviceNet connectivity for RSLinx and RSNetWorx for DeviceNet
- drivers for Windows NT and Windows 2000

DeviceNet Details

Feature	1784-CPCIDS
Explicit Messaging	Yes
I/O Messaging	Yes
Faulted Address Recovery	No
Baud Rates Autobaud Auto Device Replacement	125Kb, 250Kb, 500Kb No Yes

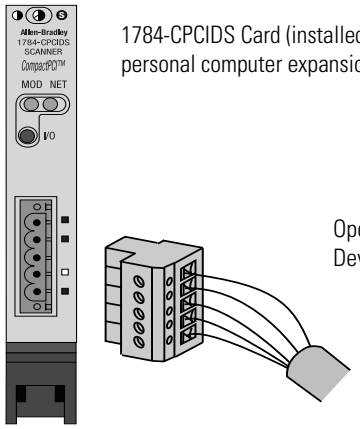
Feature	1784-CPCIDS
Master/Scanner	Yes
I/O Slave Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes Yes
Power Requirements PC DeviceNet	 5V @ 625 mA max 24V dc @ 90 mA max
I/O Data Size	In: 2048 bytes Out: 2048 bytes

Configuration Information

Configure	By using
Baud Rates, Node Addresses and Scan List	RSNetWorx for DeviceNet

Physical Connection

You need the following components to connect a 1784-CPCIDS card to a DeviceNet network.



1784-CPCIDS Card (installed in a personal computer expansion slot)

Open-style connector attached to a DeviceNet drop line (ships with module)

30999

A

Related Publications

Title	Publication Number
DeviceNet CompactPCI Bus 1784-CPCIDS Scanner Card Data Sheet	NETS-SP005B-US-E
DeviceNet CompactPCI Communication Interface Card Installation Instructions	1784-IN036B-EN-P
DeviceNet PCI Communication Interface Card User Manual	1784-6.5.30
IOLinx SDK Data Sheet	NETS-SP010C-US-E

Ordering Information

Follow the steps below to order the 1784-CPCIDS DeviceNet Scanner Card:

1. Order the DeviceNet Scanner Card with this catalog number:

Description	Catalog Number
DeviceNet Compact PCI Bus 1784-CPCIDS Scanner Card	1784-CPCIDS

2. In addition to ordering your Scanner Card, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. You can also order the IOLinx Software Development Kit (SDK) or SoftLogix Software-based Control Systems to monitor and control your processes.

Description	Catalog Number
IOLinx SDK	9230-IOLINXSDK
SoftLogix 5 Software-based Control System Unlimited channels 1 channel 2 channel	 1789-SL5 1789-SL51 1789-SL52
SoftLogix5800 Software-based Control Systems SoftLogix5860 (16-slot) SoftLogix5830 (5-slot) SoftLogix5810 (2-slot)	 1789-L60 1789-L30 1789-L10

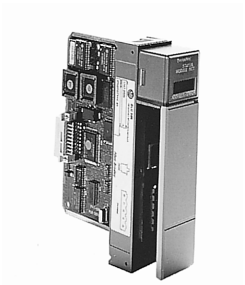
4. Record your selection in the bill of materials on page BOM-1.

Notes:

PLC/SLC/Logix-based Controllers

Rockwell Automation offers DeviceNet connectivity to five of its programmable logic controller platforms: PLC, SLC, ControlLogix, MicroLogix, and CompactLogix. Using a DeviceNet interface module, you can program any of your controllers right over the network.

- **DeviceNet Interface Module** - communicates between Rockwell Automation controllers, other DF1 full-duplex devices, and UCMM capable DeviceNet products in a peer-to-peer fashion and with DeviceNet scanners as slave I/O.
- **DeviceNet Scanners for PLC and SLC Programmable Controllers** - provide I/O control between the processor and DeviceNet devices. These scanners also provide pass-through and bridging capabilities for the collection of data and configuration of devices while connected to a higher level network.



- **DeviceNet ControlLogix Bridge/Scanner Module** - allows for communication between multiple DeviceNet networks over a common backplane or among multiple networks supported within the ControlLogix gateway.

DeviceNet Interface Module

The DeviceNet Interface Module allows you to communicate between Allen-Bradley controllers over the DeviceNet network in a peer-to-peer fashion. You can also create a high performance distributed control architecture with multiple controllers as slave I/O, exchanging I/O data with a master controller on DeviceNet.

The DeviceNet Interface Module changes the physical layer so that devices without DeviceNet interfaces can communicate with DeviceNet products.

DeviceNet Features and Benefits

- programs A-B controllers over DeviceNet
- easy peer-to-peer messaging between MicroLogix, SLC5/03, 5/04, 5/05, PLC-5s, PCs and other devices using DF1 full-duplex protocol
- explicit messaging with other UCMM capable DeviceNet products
- configurable as slave I/O to a DeviceNet scanner—provides distributed control instead of distributed I/O
- supports change-of-state, cyclic and polled messaging
- configurable via its RS-232 port with the free series B DNI utility (download by visiting www.ab.com/micrologix, then clicking on the appropriate product. Then click on Software and Manuals), or a message from the A-B controller

DeviceNet Details

Feature	DeviceNet Interface Module
Explicit Peer-to-Peer Messaging	Yes
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	Yes
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No
I/O Slave Messaging Change-of-state (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes No
DeviceNet Current Draw	350 mA @ 11vdc

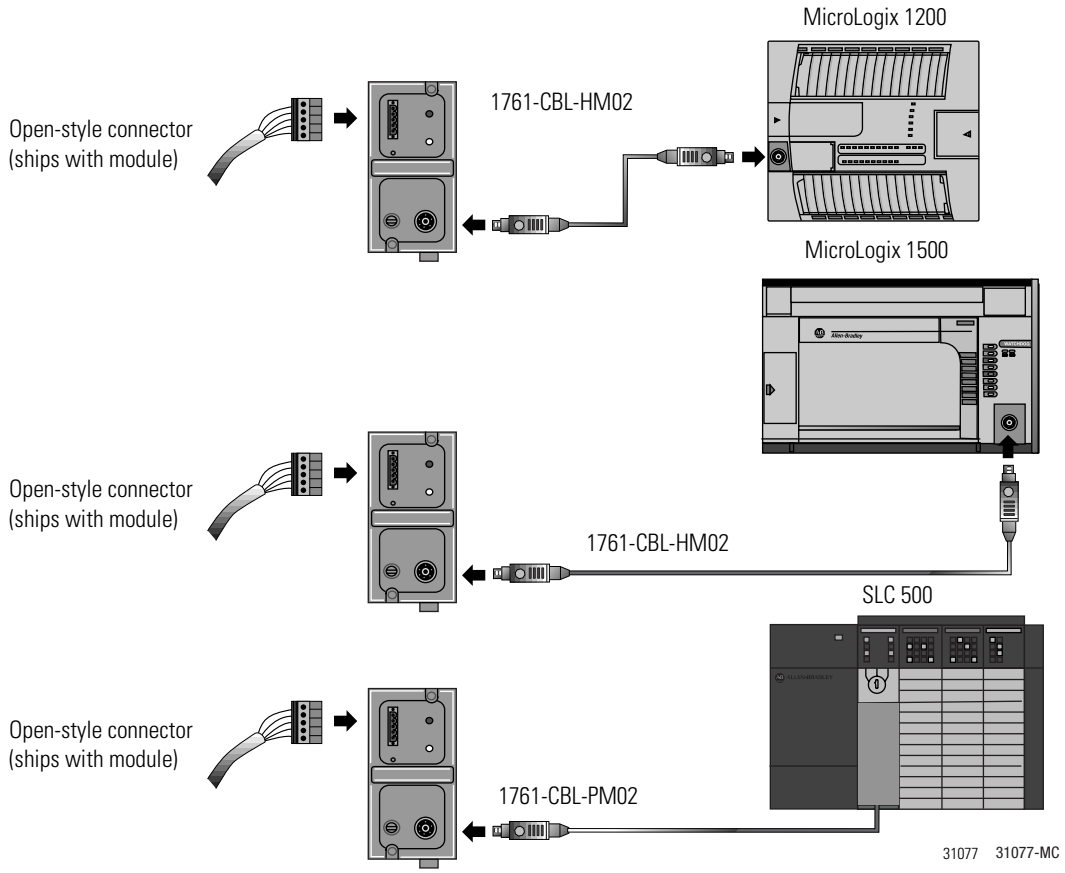
Feature	DeviceNet Interface Module
I/O Data Sizes (min/max)	In: 0-32 words Out: 0-32 words

Configuration Information

Configure	By using
Baud Rates	Autobaud via RSNetWorx for DeviceNet Node Commissioning Tool or via DNI Configuration Utility
Node Addresses	via RSNetWorx for DeviceNet Node Commissioning Tool or via DNI Configuration Utility
Parameters	EDS files downloaded from http://www.ab.com/networks/eds

Physical Connection

You need a DeviceNet open-style connector (included with the module) to connect a DeviceNet Interface Module to a DeviceNet network.



TIP

If you are connecting a MicroLogix controller, visit www.ab.com/micrologix to download the free configuration software, or for more information.

Related Publications

Title	Publication Number
DeviceNet Interface Module Installation Instructions	1761-5.11

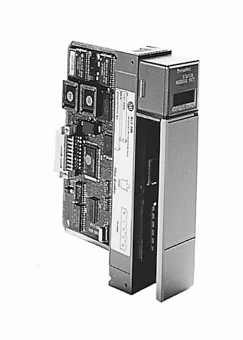
Title	Publication Number
DeviceNet Interface Module User Manual	1761-6.5

Ordering Information

Description	Catalog Number
DeviceNet Interface Module	1761-NET-DNI

Record your selection in the bill of materials on page BOM-1.

DeviceNet Scanners for PLC and SLC Programmable Controllers



Modular interfaces provide DeviceNet connectivity to Allen-Bradley ControlLogix, PLC-5, and SLC-500 processors. Multiple interface modules can reside in the same I/O chassis for each processor, limited only by the I/O chassis size and power supply capacity. The interface modules provide I/O control between the processor and DeviceNet devices. The interface modules can also be configured in slave mode, exchanging I/O data with another controller, while controlling its own I/O on the same DeviceNet network.

The Allen-Bradley modular controller interfaces for DeviceNet provide additional features above I/O control that save you time and money. You can access multiple DeviceNet network systems from one location, saving time. Explicit messaging functionality allows you to modify device parameters using the logic you have programmed in your controllers.

DeviceNet Features and Benefits

- one channel per scanner: up to 63 slave devices (SLC); 2 channels per scanner: up to 126 slave devices (PLC)
- supports I/O change-of-state, cyclic, strobe, and poll messaging
- provides diagnostic faulted device failure table for PLC or SLC logic monitoring
- supports multiple scanners per I/O chassis: local, extended local, and remote chassis.
- Auto Device Replacement (SLC)
- supports slave mode operations (SLC)

B

DeviceNet Details

Feature	PLC Scanners
Explicit Peer-to-Peer Messaging	Yes
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	No
Faulted Address Recovery	**PLC-5/B:** No **PLC-5/C:** Yes
Baud Rates Auto Device Replacement	125Kb, 250Kb, 500Kb **PLC-5/B:** No **PLC-5/C:** Yes
Master/Scanner	Yes
I/O Slave Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes Yes
DeviceNet Current Draw	24V dc @ 90 mA
I/O Data Sizes (min/max)	In: 356 words Out: 356 words 0-24 bits discrete

Feature	SLC Scanners
Explicit Peer-to-Peer Messaging	Yes
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	No
Faulted Address Recovery	Yes
Baud Rates Auto Device Replacement	125Kb, 250Kb, 500Kb Yes
Master/Scanner	Yes
I/O Slave Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes Yes
DeviceNet Current Draw	24V dc @ 90 mA
I/O Data Sizes (min/max)	In: 150 words Out: 150 words 32 words discrete

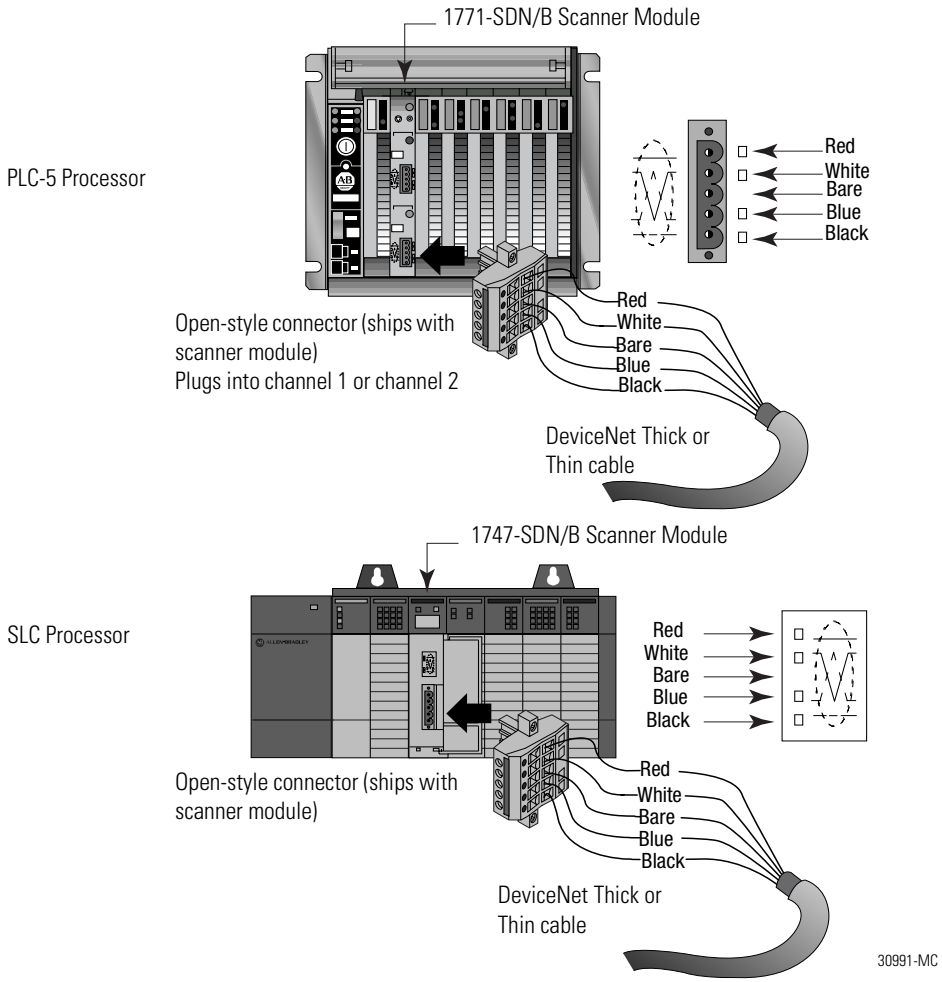
Configuration Information

Configure:	By using:
Baud Rates, Node Addresses and Scan List	**PLC Scanner:** DIP Switches **SLC Scanner:** Node Commissioning via RSNetWorx for DeviceNet Node Commissioning Tool

B

Physical Connection

You need the following components to connect a DeviceNet Scanner to a DeviceNet network.



B

Related Publications

Title	Publication Number
DeviceNet Scanner Manual Installation Instructions	1771-5.14
DeviceNet Scanner Manual Installation Instructions	1747-5.8
DeviceNet Scanner Configuration Manual	1771-6.5.118
DeviceNet Scanner Configuration Manual	1747-6.5.2

Ordering Information

Follow the steps below to order the DeviceNet Scanner:

1. Order the DeviceNet Scanner with this catalog number:

TIP You can use multiple Scanners per chassis.

Description	Catalog Number
SLC-500 Scanner	1747-SDN
PLC-5 Scanner	1771-SDN

2. In addition to ordering your Scanner, order RSNetWorx for DeviceNet for configuration purposes:

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

DeviceNet ControlLogix Bridge/Scanner Module

As part of the ControlLogix Gateway, the DeviceNet Bridge module allows communication between multiple DeviceNet networks over a common backplane or among multiple networks supported within the Gateway. The presence of this module within the Gateway also allows communication between a node on DeviceNet and a node on another network, such as EtherNet/IP, ControlNet or Data Highway Plus.

DeviceNet Features and Benefits

- provides DeviceNet monitoring, configuration, and I/O scan capabilities
- supports change-of-state, cyclic, strobe, and poll I/O messaging
- single DeviceNet connection
- supports slave mode operation
- provides a built-in network power detection
- user selectable manual configuration button for data rate and node address
- auto-device replacement
- ControlLogix backplane supports multiple scanner cards

DeviceNet Details

Feature	ControlLogix Bridge Module
Explicit Peer-to-Peer Messaging	Yes
Auto Device Replacement	Yes
Configuration Consistency Value	No
Faulted Address Recovery	Yes
Baud Rates Autobaud Auto Device Replacement	125Kb, 250Kb, 500Kb No Yes
Master/Slave Mode	Yes
I/O Slave Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes Yes
DeviceNet Current Draw	90 mA maximum @ 11-25V dc

Feature	ControlLogix Bridge Module
I/O Data Sizes (min/max)	In: 496 bytes Out: 496 bytes

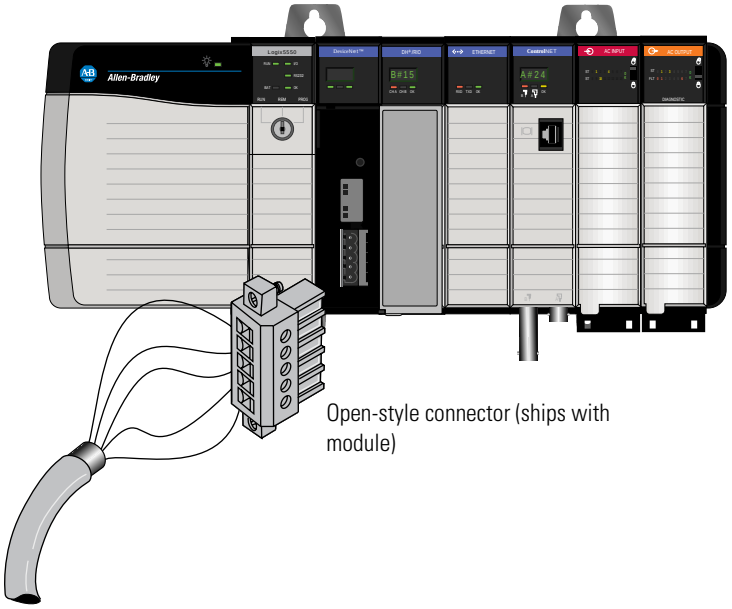
Configuration Information

Configure	By using
Baud Rates, Node Addresses and Scan List	Pushbutton or Node Commissioning via RSNetWorx for DeviceNet Node Commissioning Tool

Physical Connection

You need the following components to connect a ControlLogix Bridge Module to a DeviceNet network.

ControlLogix chassis with 1756-DNB DeviceNet module



Related Publications

Title	Publication Number
ControlLogix DeviceNet Scanner Module Installation Instructions	1756-5.66
ControlLogix DeviceNet Interface Module User Manual	1756-6.5.19
ControlLogix Selection Guide	1756-2.7

Ordering Information

Follow the steps below to order the ControlLogix DeviceNet Bridge Module:

1. Order the ControlLogix DeviceNet Bridge Module with this catalog number:

Description	Catalog Number
ControlLogix DeviceNet Bridge Module	1756-DNB

2. In addition to ordering your Bridge Module, order RSNetWorx for DeviceNet for configuration purposes:

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

Linking Devices

Linking devices are Rockwell Automation's answer to inter-network data exchange. With linking devices, you can reduce control device costs because you are able to leverage existing network structures to access data from other level networks. You are also able to expand the number of nodes on other networks, such as ControlNet.

- **1788-CN2DN ControlNet to DeviceNet Linking Device** - use this module if you already have a ControlNet network and wish to exchange data between your ControlNet and DeviceNet networks. This module allows you to seamlessly integrate your Control and Automation level networks with your device-level network.You can also use this device if your scanner devices are located on a ControlNet network, and you wish to keep them there, but also use them to control devices on your DeviceNet network.

ControlNet to DeviceNet Linking Device

The ControlNet to DeviceNet Linking Device from Rockwell Automation is a combination DeviceNet scanner and ControlNet adapter. One side of the Linking Device is a DeviceNet scanner with the capacity for handling 500 bytes of data in and out from DeviceNet-compliant devices, such as sensors, drives, I/O blocks and pneumatic valves. Meanwhile, the other side is a ControlNet scheduled adapter with redundant media communications and a Network Access Port.

The Linking Device also serves as a ControlNet-to-DeviceNet bridge for configuring DeviceNet devices from a PC running RSNetWorx and residing on ControlNet. The Linking Device also allows controllers running on ControlNet to read status messages from DeviceNet devices.

DeviceNet Features and Benefits

- full DeviceNet master library support for Automatic Device Replacement (ADR)

Product Features and Benefits

- DIN-rail mounting
- network and module status LEDs
- redundant ControlNet
- rotary switches for baud rate and node address
- ControlNet Network Access Port (NAP)

C

DeviceNet Details

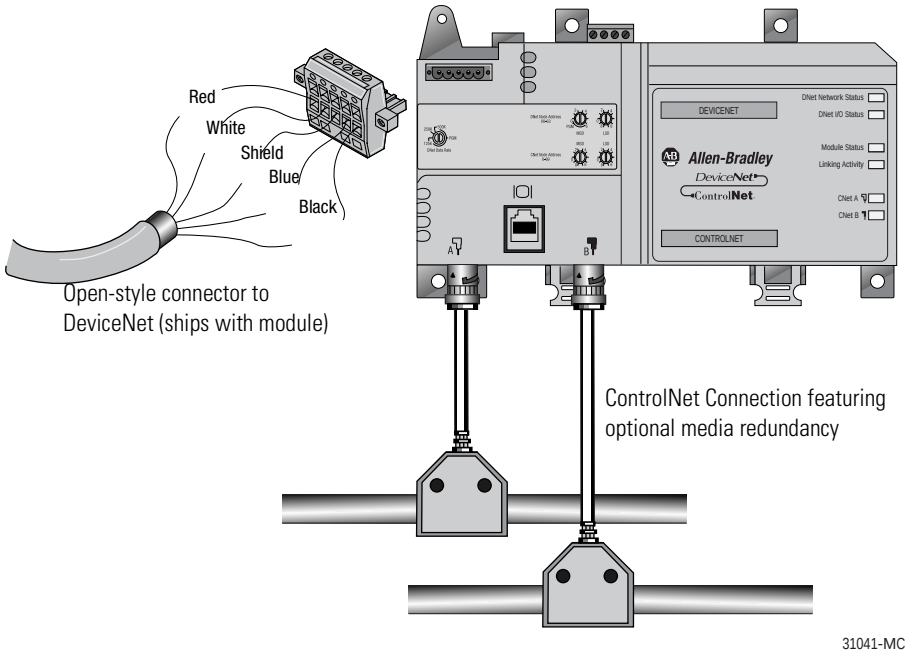
Feature	ControlNet to DeviceNet Linking Device
Explicit Peer-to-Peer Messaging	Yes
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	No
Faulted Address Recovery	Yes
Baud Rates Autobaud Auto Device Replacement	125Kb, 250Kb, 500Kb No Yes
Master/Scanner	Yes
I/O Slave Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes Yes
DeviceNet Current Draw	11-25V dc (24V dc nominal), 90 mA max
I/O Data Sizes (min/max)	In: 2048 double words Out: 2048 double words

Configuration Information

Configure	By using
Baud Rates/Node Addresses	Rotary Switches or Node Commissioning via RSNetWorx for DeviceNet Node Commissioning Tool
Scan List	RSNetWorx for DeviceNet

Physical Connection

You need the following components to connect the 1788-CN2DN module to a DeviceNet network.



Related Publications

Title	Publication Number
ControlNet to DeviceNet Linking Device Installation Instructions	1788-IN052C-EN-P

Ordering Information

Follow the steps below to order the ControlNet to DeviceNet Linking Device:

1. Order the Linking Device with this catalog number:

Catalog Number	Description
1788-CN2DN	ControlNet to DeviceNet Linking Device

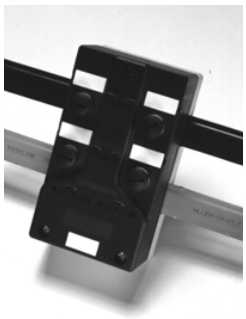
2. In addition to ordering your Linking Device, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

I/O - Packaged

The Packaged I/O family provides blocks of 24V dc digital I/O that can be either panel-mounted or mounted directly on equipment where sensors or actuators are placed. The Packaged I/O family consists of:



- **1792D ArmorBlock MaXum** - the first I/O product that is compatible with the KwikLink™ flat media system for communication on DeviceNet. MaXum builds on the ArmorBlock technology providing additional diagnostic capabilities, cost savings and flexibility.

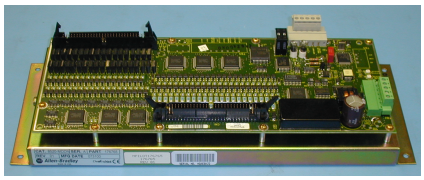
  Now with DeviceLogix™ smart component technology, ArmorBlock MaXum can provide local control for the output devices attached to the block.

- **1791D CompactBlock™ I/O** - one of the smallest, most cost-effective ways to communicate over the DeviceNet network. CompactBlock I/O includes a built-in network adapter, I/O circuitry for inputs or outputs, and a power supply in a single package. These modules meet the needs of shallow cabinets and easily fit into confined areas.

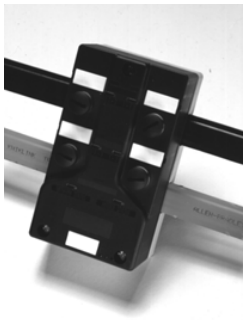
  CompactBlock I/O features DeviceLogix smart component technology for faster sense-to-actuation times.

- **1790 CompactBlock LDX I/O** - similar to CompactBlock I/O, CompactBlock LDX provides a lower-cost solution for light industrial applications.

- **8520-MDDN Medium Density I/O Panel** - is an all-inclusive, general purpose I/O module you mount on a panel or inside an enclosure.



ArmorBlock MaXum



ArmorBlock MaXum is the first I/O product to take advantage of the DeviceNet KwikLink flat media system, which provides a lower cost solution to your physical media needs. The MaXum module's I/O is exchanged with the master device through a polled, change-of-state, or cyclic connection. It also contains a hardwired watchdog circuit which places outputs in known state in case of a block internal fault.

DeviceNet Features and Benefits

- supports change-of-state I/O messaging
- autobaud capabilities—module automatically matches system baud rate
- ability to reset faulted I/O

Product Features and Benefits

- no mounting restrictions
- select off-to-on and on-to-off input filters best suited for your application
- point level diagnostics including input open wire, output no load, and selectable output fault latching
- auxiliary power detection
- I/O "heartbeat" notification—lets the scanner know when the module is connected and ready to communicate
- comes in 2 in, 4 in, 8 in, 16 in, 4 out, 8 out, 16 out, 2in/2out, 4in/4out, 8in/8out, 12in/4out configurations
- DeviceLogix-enabled for local control of output devices

DeviceNet Details

Feature	MaXum I/O
Explicit Peer-to-Peer Messaging	No
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	Yes
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No

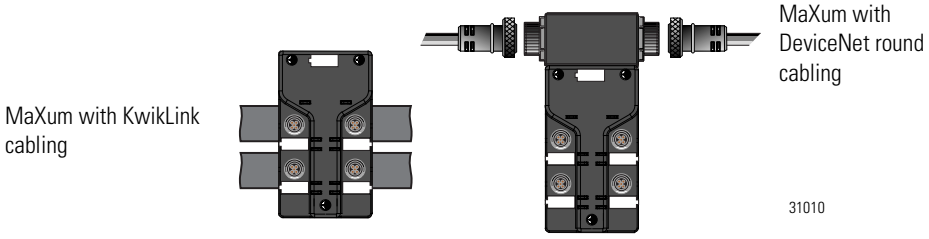
Feature	MaXum I/O
I/O Slave Messaging	
Change-of-State (COS) Polling Cyclic Bit Strobe	Yes Yes Yes No
DeviceNet Current Draw	Varies based on configuration
I/O Data Sizes (min/max)	Varies based on configuration

Configuration Information

Configure	By using
Baud Rates	Autobaud (default) or via RSNetWorx for DeviceNet Node Commissioning Tool
Node Addresses	Rotary Switches or via RSNetWorx for DeviceNet Node Commissioning Tool
Parameters	RSNetWorx for DeviceNet

Physical Connection

You need the following components to connect the MaXum I/O modules to a DeviceNet network.



Related Publications

Title	Publication Number
ArmorBlock Technical Data	1792-TD001B-EN-P
DeviceNet Cable Planning and Installation Manual	DN-6.7.2
ArmorBlock MaXum I/O Product Profile	1792D-1.4

Ordering Information

Follow the steps below to order ArmorBlock MaXum I/O Modules:

1. Order ArmorBlock MaXum I/O Modules and Cable Bases (necessary for connecting the Modules to a DeviceNet network) with these catalog numbers:

Catalog Number	Description
1792D-2BV0D	2 Connectors, 2 Inputs Sinking/Sourcing
1792D-4BV0D	4 Connectors, 4 Inputs Sinking/Sourcing
1792D-8BV0D	8 Connectors, 8 Inputs Sinking/Sourcing
1792D-8BVT0D	4 Connectors, 8 Inputs Sinking/Sourcing
1792D-16BVT0D	8 Connectors, 16 Inputs Sinking/Sourcing
1792D-2BVA2D	4 Connectors, 2 Inputs Sinking/Sourcing, 2 Outputs
1792-4BV4D	8 Connectors, 4 Inputs Sinking/Sourcing, 4 Outputs
1792D-4BVT4D	4 Connectors, 4 Inputs Sinking/Sourcing, 4 Outputs
1792D-12BVT4D	8 Connectors, 12 -Inputs Sinking/Sourcing, 4 Outputs
1792D-8BVT8D	8 Connectors, 8 Inputs Sinking/Sourcing, 8 Outputs
1792D-8BIO8E	8 Connectors with 1 Input and 1 Output on Each Connector
1792D-0B4D	4 Sourcing Outputs, 4 Connectors
1792D-OB8D	8 Connectors, 8 Sourcing Outputs
1792D-0VT16E	16 Sinking Outputs, 8 Connectors
1792D-CB12	Cable Base, 12mm Drop Connection
1792D-CBFM	Cable Base, Flat Media with Power
1792D-CB18PT	Cable Base 18mm with 18mm 4-pin Power Pass-through
1792D-CB18P	Cable Base 18mm with 18mm 4-pin Power

Catalog Number	Description
1792D-CB18	Cable Base 18mm with Pass-through

2. In addition to ordering your Modules, order RSNetWorx for DeviceNet for configuration purposes:

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Order these ArmorBlock Cordsets:

TIP Other styles and lengths are available. Contact your Rockwell Automation representative for details.

Description	Catalog Number
Straight Mini Female 3-pin to Conductor (8amp) 1.8m (6ft)	889N-F3AFC-6F
Straight Mini Female 3-pin to Conductor (8amp) 3.7m (12ft)	889N-F3AFC-12F
Straight Mini Female 3-pin to Conductor (8amp) 6.1m (20ft)	889N-F3AFC-20F
Straight Micro Male 4-pin to Conductor 2m (6.5ft)	889D-M4AC-2
Straight Micro Male 4-pin to Conductor 5m (16.4ft)	889D-M4AC-5
Straight Micro Male 4-pin to Straight Mini Female 4-pin 1m (3.3ft)	871ACS4-DM1N
Straight Micro Male 4-pin to Straight Mini Female 4-pin 2m (6.5ft)	871ACS4-DM2N
Straight Micro Male 4-pin to Straight Mini Female 4-pin 3m (9.8ft)	871ACS4-DM3N
Straight Micro Male 4-pin to Straight Micro Female 4-pin 1m (3.3ft)	889D-F4ACDM-1
Straight Micro Male 4-pin to Straight Micro Female 4-pin 2m (6.5ft)	889D-F4ACDM-2
Straight Micro Male 4-pin to Straight Micro Female 4-pin 5m (16.4ft)	889D-F4ACDM-5
Straight Micro Male 4-pin to Right Angle Micro Female 4-pin 1m (3.3ft)	889D-R4ACDM-1
Straight Micro Male 4-pin to Right Angle Micro Female 4-pin 2m (6.5ft)	889D-R4ACDM-2

Description	Catalog Number
Straight Micro Male 4-pin to Right Angle Micro Female 4-pin 5m (16.4ft)	889D-R4ACDM-5
Right Angle Micro Male 4-pin to Straight Micro Female 4-pin 1m (3.3ft)	889D-F4ACDE-1
Right Angle Micro Male 4-pin to Straight Micro Female 4-pin 2m (6.5ft)	889D-F4ACDE-2
Right Angle Micro Male 4-pin to Straight Micro Female 4-pin 5m (16.4ft)	889D-F4ACDE-5
Right Angle Micro Male 4-pin to Right Angle Micro Female 4-pin 1m (3.3ft)	889D-R4ACDE-1
Right Angle Micro Male 4-pin to Right Angle Micro Female 4-pin 2m (6.5ft)	889D-R4ACDE-2
Right Angle Micro Male 4-pin to Right Angle Micro Female 4-pin 5m (16.4ft)	889D-R4ACDE-5
Right Angle Micro Male 4-pin to Straight Pico Female 3-pin 1m (3.3ft)	889P-F3ABDE4-1
Right Angle Micro Male 4-pin to Straight Pico Female 3-pin 2m (6.5ft)	889P-F3ABDE4-2
Right Angle Micro Male 4-pin to Straight Pico Female 3-pin 5m (16.4ft)	889P-F3ABDE4-5
Right Angle Micro Male 4-pin to Right Angle Pico Female 3-pin 1m (3.3ft)	889P-R3ABDE4-1
Right Angle Micro Male 4-pin to Right Angle Pico Female 3-pin 2m (6.5ft)	889P-R3ABDE4-2
Right Angle Micro Male 4-pin to Right Angle Pico Female 3-pin 5m (16.4ft)	889P-R3ABDE4-5
Right Angle Micro Male 4-pin to Straight Pico Female 4-pin 1m (3.3ft)	889P-F4ABDE-1
Right Angle Micro Male 4-pin to Straight Pico Female 4-pin 2m (6.5ft)	889P-F4ABDE-2
Right Angle Micro Male 4-pin to Straight Pico Female 4-pin 5m (16.4ft)	889P-F4ABDE-5
Micro Male 4-pin Splitter to Conductor 5m (16.4ft) Each Leg	879-C3AEDM4-5
Micro Male 4-pin Splitter to Two Straight Micro Female 4-pin 0.3m (1ft) Each Leg	879D-F4ACDM-OM3
Micro Male 4-pin Splitter to Two Straight Micro Female 4-pin 1m (3.3ft) Each Leg	879D-F4ACDM-1
Micro Male 4-pin Splitter to Two Straight Micro Female 4-pin 2m (6.5ft) Each Leg	879D-F4ACDM-2
Micro Male 4-pin Splitter to Two Right Micro Female 4-pin 0.3m (1ft) Each Leg	879D-R4ACDM-OM3

Description	Catalog Number
Micro Male 4-pin Splitter to Two Right Micro Female 4-pin 1m (3.3ft) Each Leg	879D-R4ACDM-1
Micro Male 4-pin Splitter to Two Right Micro Female 4-pin 2m (6.5ft) Each Leg	879D-R4ACDM-2
ArmorBlock Splitter Tee	1485P-P1R4-DR4
Micro Male 4-pin Straight Terminal Chamber, 22AWG	871A-TS4-DM
Micro Male 4-pin Straight Terminal Chamber, 18AWG	871A-TS4-DM1
Micro Male 4-pin Right Angle Terminal Chamber, 22AWG	871A-TR4-DM

4. Record your selection in the bill of materials on page BOM-1.

CompactBlock I/O

CompactBlock™ I/O offers easy-to-use, highly space efficient, and cost-effective distributed I/O solution for 24V dc applications. CompactBlock I/O products include a built-in network adapter, I/O circuitry for inputs or outputs, and a power supply in a single package. This translates into fewer components to order and stock. Applications such as conveyor systems, palletizers, sorting machines, packaging, bottling, labeling, on-vehicle systems, and HVAC are a few of the many applications where CompactBlock I/O can be used for highly distributed I/O solutions.

DeviceNet CONFORMANCE TESTED

DeviceNet Features and Benefits

- autobaud capabilities—module automatically matches system baud rate
- supports polled, cyclic, and change-of-state I/O messaging, which can increase network throughput
- retention of DeviceNet connector—prevents DeviceNet cable from vibrating loose
- single bus cable reduces wiring costs

Product Features and Benefits

- rotary node address switches reduce commissioning time
- selectable input filters (0-16 msec) offsets contact bounce and noise
- select off-to-on and on-to-off input filters best suited for your application
- 10-30 V range accommodates a broad range of applications

- isolated input and output power enables use of separate power supply voltages for groups of I/O points
- input circuits are type 3 compatible with a wide selection of sensors (type 1 and type 2)
- protects outputs against short circuit or over current conditions such as accidental miswiring
- hardware watchdog puts outputs in a known state if the hardware fails
- DeviceLogix smart component technology enables faster sense-to-actuation times

DeviceNet Details

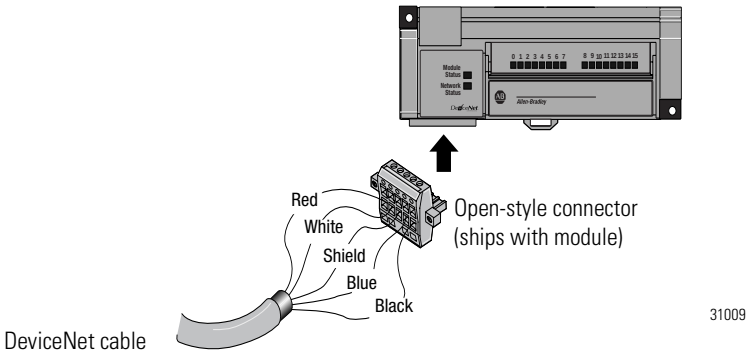
Feature	CompactBlock I/O
Explicit Peer-to-Peer Messaging	No
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	Yes
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No
I/O Slave Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes No
DeviceNet Current Draw	200 mA max @ 11V
I/O Data Sizes	varies depending on product configuration

Configuration Information

Configure	By using
Baud Rates	Autobaud (default) or via RSNetWorx for DeviceNet Node Commissioning Tool
Node Addresses	Rotary Switches or via RSNetWorx for DeviceNet Node Commissioning Tool
Parameters	EDS files within RSNetWorx

Physical Connection

You need the following components to connect the CompactBlock I/O Modules to a DeviceNet network. A dual DeviceNet mating connector is included with every base module.



Related Publications

Title	Publication Number
CompactBlock I/O Technical Data	1791D-TD001C-EN-P
CompactBlock I/O for DeviceNet Installation Instructions	1791D-IN001A-EN-P
CompactBlock I/O Product Profile	1791D-PP002A-EN-P
CompactBlock I/O Brochure	1791D-BR001A-US-P

Ordering Information

Follow the steps below to order the CompactBlock I/O Modules:

1. Order I/O modules and accessories with these catalog numbers:

Catalog Number	Description
1791D-16B0	24V dc 16 Input Sinking, Base Module
1791D-16V0	24V dc 16 Input Sourcing, Base Module
1791D-16B0X	24V dc 16 Input Sinking, Expansion Module
1791D-16V0X	24V dc 16 Input Sourcing, Expansion Module

Catalog Number	Description
1791D-0V16P	24V dc 16 Output Sinking, Base Module
1791D-0B16P	24V dc 16 Output Sourcing, Base Module
1791D-0V16PX	24V dc 16 Output Sinking, Expansion Module
1791D-0B16PX	24V dc 16 Output Sourcing, Expansion Module
1791D-8B8P	24 V dc 8 Input Sinking, 8 Output Sourcing, Base Module
1791D-8V8P	24V dc 8 Input Sourcing, 8 Output Sinking, Base Module
1791D-4B4P	24V dc 4 Input Sinking, 4 Output Sourcing, Base Module
1791D-0B8P	24V dc 8 Output Sourcing, Base Module
1791D-4B0	24V dc 4 Input Sinking, Base Module (not expandable)
1791D-4CMCBL	Replacement Ribbon Cable, 4 cm (lots of 5)
1791D-15CMCBL	Longer Ribbon Cable, 15 cm (lots of 5)
1487-PLUG10R	Connector (for daisy-chaining a DeviceNet drop cable)

2. In addition to ordering your I/O modules, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

CompactBlock LDX I/O

CompactBlock LDX is a lower-cost I/O option for light industrial and commercial applications such as semiconductor manufacturing and HVAC. CompactBlock LDX products include a built-in network adapter, I/O circuitry for inputs and outputs, and a power supply.

DeviceNet Features and Benefits

- autobaud rate detect - block automatically matches your system baud rate
- supports polled, cyclic and change-of-state messaging for more efficient use of network bandwidth
- ODVA conformance ensures high level of interoperability with other DeviceNet products

Product Features and Benefits

- wide breadth of I/O types can handle diverse applications
- highly compact design fits into confined areas
- DIN rail or panel mounting
- horizontal or vertical orientation

DeviceNet Details

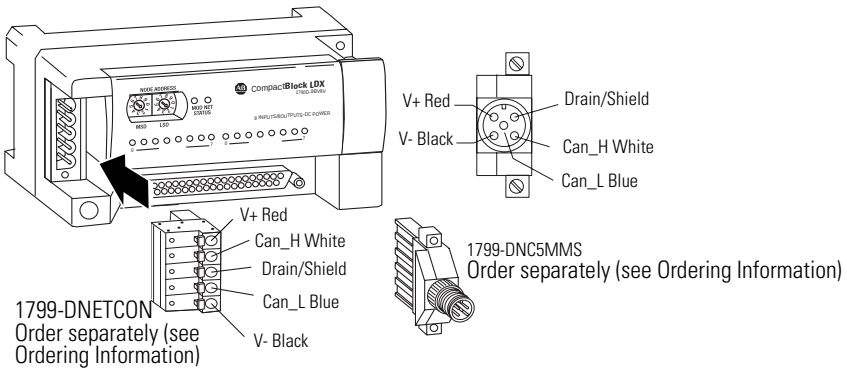
Feature	CompactBlock I/O
Explicit Peer-to-Peer Messaging	No
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	No
Faulted Address Recovery	No
Baud Rates Autobaud Auto Device Recognition	125Kb, 250Kb, 500Kb Yes No
Master/Scanner	No
I/O Slave Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes No
DeviceNet Current Draw	200 mA max
I/O Data Sizes	Base: 16 bits Expansion: 16 bits

Configuration Information

Configure	By using
Baud Rates	Autobaud (default) or via RSNetWorx for DeviceNet Node Commissioning Tool
Node Addresses	Rotary Switches or via RSNetWorx for DeviceNet Node Commissioning Tool
Parameters	EDS files within RSNetWorx

Physical Connection

Connect DeviceNet thick or thin cable to one of the DeviceNet connectors as shown below. A color-coded wiring diagram is also printed next to the connector on the left side of the module



Once you have properly wired the DeviceNet cable to the connector, attach the connector to the module. If applicable, use the locking screws on the connector to fasten it to the module.

Related Publications

Title	Publication Number
CompactBlock I/O for DeviceNet Installation Instructions:	
Base Blocks, Digital, D-shell	1790-IN007A-EN-P
Expansion Blocks, Digital, D-shell	1790-IN003A-EN-P
Base Blocks, Digital, Terminal Block	1790-IN006A-EN-P
Expansion Blocks, Digital, Terminal Block	1790-IN005A-EN-P

Ordering Information

Follow the steps below to order the CompactBlock LDX I/O Modules:

1. Order I/O modules and accessories with these catalog numbers:

Catalog Number	Description
1790D-16BV0	24V dc, 16 Universal Input Base, D-shell Connector
1790D-8BV8V	24V dc, 8 Universal Input/8 Sinking Output Base, D-shell Connector

Catalog Number	Description
1790D-OW8X	8 Relay Output Expansion Module
1790-16BV0X	24V dc, 16 Universal Input Expansion Module, D-shell Connector
1790-0V16X	24V dc, 6 Sinking Output Expansion Module, D-shell Connector
1790-0B16X	24V dc, 16 Sourcing Output Expansion Module, D-shell Connector
1790D-T16BV0	24V dc, 16 Universal Input Base, Screw Termination
1790D-T8BV8V	24v dc, 8 Universal Input/8 Sinking Output Base, Screw Termination
1790D-T8BV8B	24V dc, 8 Universal Input/8 Sourcing Output Base, Screw Termination
1790-T0W8X	8 Relay Output Expansion Module, Screw Termination
1790-T16BV0X	24V dc, 16 Universal Input Expansion Module, Screw Termination
1790-T0B16X	24V dc, 16 Sourcing Output Expansion Module, Screw Termination
1790D-0B16	24V dc, 16 Sourcing Output Base, D-shell Connector
1790D-OV16	24V dc, 16 Sinking Output Base, D-shell Connector
1790D-0W6	6 Relay Output Base, D-shell Connector
1790-8BV8VX	24V dc, 8 Universal Input/8 Sinking Output Expansion Module, D-shell Connector
1790-8BV8BX	24V dc, 8 Universal Input/8 Sourcing Output Expansion Module, D-shell Connector
1790D-T0B16	24V dc, 16 Sourcing Output Base, Screw Termination
1790D-T0V16	24V dc, 16 Sinking Output Base, Screw Termination
1790-T0W6	6 Relay Output Base, Screw Termination
1790-T8BV8VX	24V dc, 8 Universal Input/8 Sinking Output Expansion Module, Screw Termination
1790-T8BV8BX	24V dc, 8 Universal Input/8 Sourcing Output Expansion Module, Screw Termination
1790-T8A0	120V ac, 8 Input Base, Screw Termination
1790-T8A0X	120V ac, 8 Input Expansion Module
1790D-T0A6	120V ac, 6 Output Base, Screw Termination
1790-TOA8X	120V ac, 8 Output Expansion Module, Screw Termination
1790-T0V16X	24V dc, 16 Sinking Output Expansion Module, Screw Termination
1790-0W8X	8 Relay Output Expansion Module, D-shell Connector
1790D-8BV8B	24V dc, 8 Universal Input/8 Soucing Output Base, D-shell Connector
1790D-8BV8V	24V dc, 8 Universal Input/8 Sinking Output Base, D-shell Connector
1790D-16BV0	24V dc, Universal Input Base, D-shell Connector

2. Order accessories as needed:

Catalog Number	Description
1790-7CMCBL	LDX I/O Replacement Ribbon Cable, 7cm (lots of 5)
1790-15CMCBL	LDX I/O Optional Longer Ribbon Cable, 15cm (lots of 5)
1799-DNETCON	5-position Open-style Plug for DeviceNet
1799-DNETSCON	5-position Open-style Plug/Locking Screws for DeviceNet
1799-DSSCON37	D-sub (37) I/O Mating Connector - Solder (lots of 5)
1799-DNC5MMS	DeviceNet 5-position Open Plug to 5-pin Micro Male Connector, Straight (lots of 5)

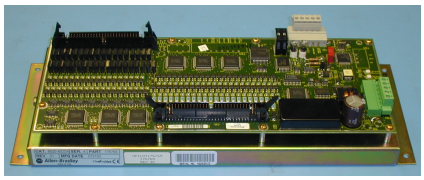
3. In addition to ordering your I/O modules, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

4. Record your selection in the bill of materials on page BOM-1.

8520-MDDN Medium Density I/O

The 8520-MDDN Medium Density I/O Panel is a general-purpose, lower-cost I/O module you mount on a panel or in an enclosure. The module uses two 60-pin double-row connectors as input and output interfaces.



DeviceNet CONFORMANCE TESTED

DeviceNet Features and Benefits

- LEDs indicate network operation, panel operation, output faults, or adapter faults
- node address is settable with a thumbwheel switch

Product Features and Benefits

- 45 sink inputs at 24V dc
- 37 source outputs at 24V dc

DeviceNet Details

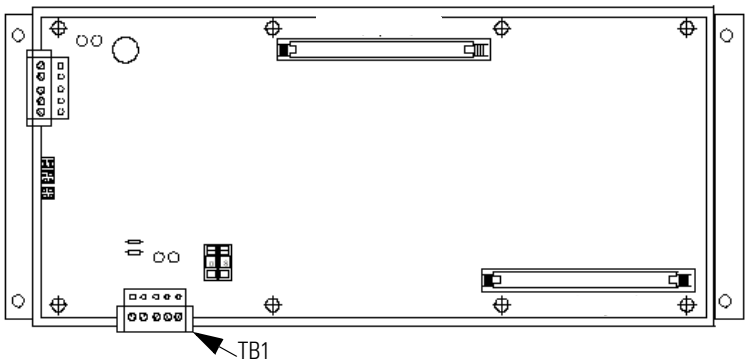
Feature	Medium Density I/O Panel
Explicit Peer-to-Peer Messaging	Yes
I/O Peer-to-Peer Messaging	Yes
Configuration Consistency Value	No
Faulted Address Recovery	No
Baud Rates Autobaud Auto Device Replacement	125Kb, 250Kb, 500Kb Yes No
Master/Scanner	No
I/O Slave Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes Yes
DeviceNet Current Draw	1.0 A max @ 24V dc
I/O Data Sizes	In: 8 bytes Out: 6 bytes

Configuration Information

Configure	By using
Baud Rates	Autobaud (default)
Node Addresses	Rotary Switches
Parameters	EDS files within RSNetWorx

Physical Connection

Connect the Panel to your DeviceNet devices with by attaching thick or thin cable terminated with an open-style DeviceNet connector to TB1 on the Panel.



Related Publications

Title	Publication Number
DeviceNet-compatible Medium Density I/O Module Installation Instructions	8520-IN027A-EN-P

Ordering Information

Follow the steps below to order the Medium Density I/O Panel:

1. Order the Panel with these catalog numbers:

Catalog Number	Description
8520-MDDN	DeviceNet-compatible Medium Density I/O Panel

2. In addition to ordering your I/O Panel, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

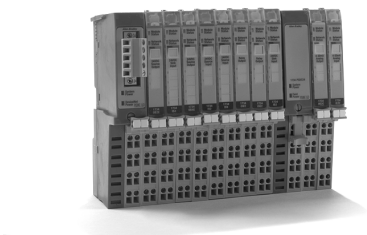
I/O - Modular

1794 FLEX™ I/O is a modular I/O system that provides all the functionality of larger, rack-based I/O, but saves you the costly hardware, installation, and space requirements of larger systems. FLEX I/O is the single source that provides you with the flexibility, cost savings and choices you need for your distributed I/O system solutions.

1793 FLEX Integra, a cost-saving option, provides integral terminal bases for a smaller installation footprint.

1734 POINT I/O is designed to handle applications where packaged I/O does not support the right mix of I/O, and a modular I/O structure does not have the right granularity of I/O for a given location. While POINT I/O addresses these issues, it also dramatically increases flexibility, and reduces installation and commissioning costs.

1769 Compact I/O is a new PLC-style I/O platform, offering industry leading features. It utilizes the latest design technology for superior performance, functionality, and ease of use.



Rockwell Automation's modular I/O solutions are:

- **1794 FLEX I/O**™ - is a compact, modular assembly including I/O modules, terminal bases, and an adapter/power-supply. With FLEX I/O, you configure the size of the FLEXbus backplane by assembling terminal bases, to which the I/O is directly wired.
- **1793 FLEX Integra**™ - this system allows design engineers to look at cost-saving opportunities when designing a system with the exact number of input/output modules to meet application requirements. This I/O platform offers integral terminal bases and modules at half the length, resulting in half the required installation space.
- **1734 POINT I/O**™ - allows you to precisely specify the amount of I/O for your application, resulting in a reduction of installation costs, and an increase in flexibility. This type of I/O is ideal for industries when flexibility and low cost-of-ownership are key to successful control system design and operation.
- **1769 Compact™ I/O** - provides a new PLC-style I/O platform. It can be used to expand the local base I/O of Allen-Bradley packaged controllers such as the MicroLogix 1500 or as distributed I/O with the appropriate adapter.

1794 FLEX I/O System

FLEX I/O is a compact, modular I/O system that consists of I/O modules, terminal bases and adapters. The FLEX I/O adapter communicates with any controller on DeviceNet, allowing connectivity from field-based, hard-wire I/O devices to the DeviceNet network. Up to eight FLEX I/O modules may be connected to a single DeviceNet adapter in any mix of digital or analog, ac or dc I/O.

DeviceNet Features and Benefits

- supports change-of-state, cyclic, and polled messaging for efficient communication
- up to eight FLEX I/O modules may be connected to a single DeviceNet adapter
- interfaces up to 128 discrete I/O points or 64 analog channels per adapter to the DeviceNet network
- remote diagnostics and status indicators for network and I/O
- adapter provides diagnostics for failed or removed I/O devices
- auto device replacement

Product Features and Benefits

- individual components allow you to mix and match I/O types and termination styles (e.g. spring, screw, IEC, NEMA, etc.)
- remove and insert I/O modules under backplane power
- can be mounted on a DIN rail or directly in-panel

DeviceNet Details

Feature	FLEX I/O Adapter
Explicit Peer-to-Peer Messaging	No
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	No
Faulted Address Recovery	No
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No

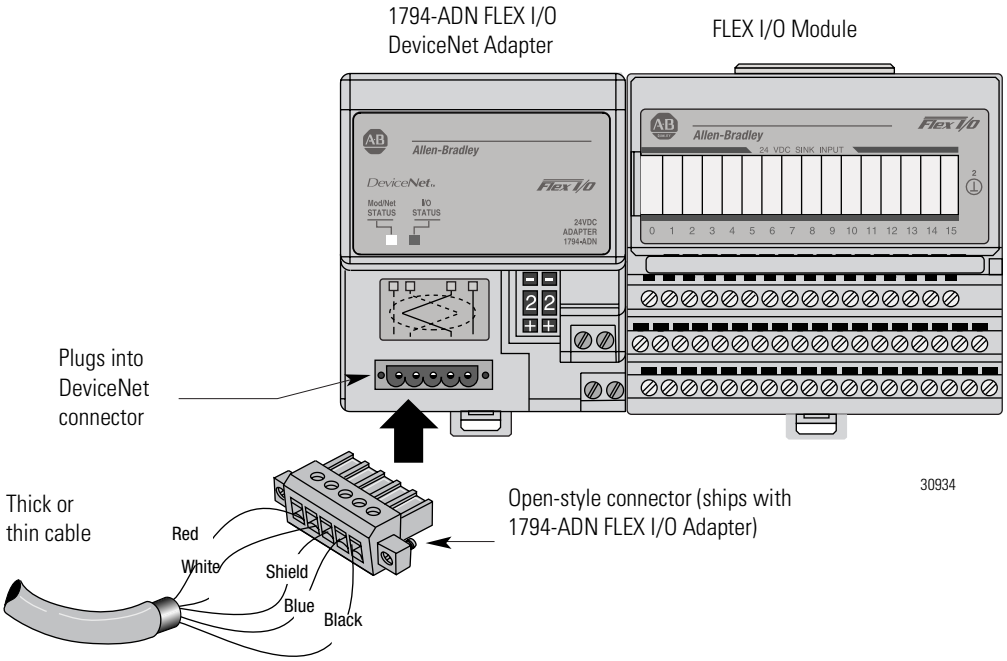
Feature	FLEX I/O Adapter
I/O Slave Messaging Change-of-state (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes Yes (inputs of 8 bytes or less only)
DeviceNet Current Draw	90 mA maximum
I/O Data Sizes (min/max)	varies depending on configuration (minimum 2 bytes for adapter)

Configuration Information

Configure	By using
Baud Rates	Autobaud
Node Addresses	Pushbutton Switches
Parameters	RSNetWorx for DeviceNet

Physical Connection

You need the following components to connect the FLEX I/O modules to a DeviceNet network.



TIP

Use pre-terminated thin cable cordsets with part numbers ending in "C." Refer to section M for more information.

Related Publications

Title	Publication Number
FLEX I/O Brochure	1974-1.16
FLEX I/O Product Data	1794-2.1
FLEX I/O DeviceNet Adapter Installation Instructions	1794-5.14
DeviceNet Adapter Module User Manual	1794-6.5.5

Ordering Information

Follow the steps below to order FLEX I/O Modules:

1. Order the DeviceNet Adapter Module:

Description	Catalog Number
24V dc DeviceNet Adapter	1794-ADN

2. Order FLEX I/O Modules with these catalog numbers:

Module Type	Catalog Number	Description
120V ac Modules	1794-IA8	8 Input Module
	1794-OA8	8 Output Module
24V dc Modules	1794-IB16	16 Sink Input Module
	1794-IV16	16 Source Input Module
	1794-OB16	16 Source Output Module
	1794-OB16P	Source Output Module
	1794-OV16	16 Sink Output Module
	1794-OV16P	16 Sink Output/Protected
	1794-OB8EP	Electronically Fused 8 Output Module
	1794-IB10XOB6	10 Input/6 2A Output Module
24V dc Analog Modules	1794-IE8/B	Selectable Analog 8 Input Module
	1794-OE4/B	Selectable Analog 4 Output Module
	1794-IE4XOE2/B	4 Input/2 Output Analog Module
24V dc Isolated Analog Modules	1794-IF4I	Source Isolated Analog 4 Input Module
	1794-OF4I	Source Isolated Analog 4 Output Module
	1794-IF2XOF2I	2 Input/2 Output Isolated Analog Module
Relay Module	1794-OW8	8 Relay Sink/Source Output Module
RTD Input Module	1794-IR8	RTD Module
Thermocouple RTD Input Modules	1794-IRT8	Thermocouple/RTD/mV Module
	1794-IT8	Thermocouple/mV Input Module
	1794-IJ2	High Resolution Frequency Input Module
SCANport Module	1203-FM1	SCANport™ Module

Module Type	Catalog Number	Description
48V dc Modules	1794-IC16	16 Sink Input Module
	1794-OC16	16 Source Output Module
Very High Speed Counter Module	1794-VHSC	24V dc 2 Channel Very High Spped Counter Module (Used with 1794-ACN15 or 1794-ACNR15 only)
2 Channel Pulse Counter Input Module	1794-ID2	24V dc Input Pulse Counter Module
4 Channel Pulse Counter Input Module	1794-IP4	12/24V dc 4 Input Pulse Counter Module
Power Supply	1794-PS13	Power Supply Module
Accessories	1794-CE1	Extender Cable, 0.3m (1ft)
	1794-CE3	Extender Cable, 0.9m (3ft)
	1794-NM1	Mounting Kit
	1794-CJC2	Cold Junction Compensator Kit
	1794-LBL	Label Kit
		RSWire Software
		ABECAD Software
Terminal Base Units	1794-TB2	2 Wire Screw Clamp Terminal Base Unit
	1794-TB3	3 Wire Screw Clamp Terminal Base Unit
	1794-TB3S	3 Wire Spring Clamp Terminal Base Unit
	1794-TB3T	Temperature Terminal Base Unit
	1794-TB3TS	Spring Clamp Temperature Terminal Base Unit
	1794-TB3G	Screw Clamp Grounded Terminal Base Unit
	1794-TB3GS	Spring Clamp Grounded Terminal Base Unit
	1794-TBN	Terminal Base Unit (NEMA-style Screws)
	1794-TBNF	Fused terminal base Unit (NEMA-style Screws)
	1203-FB1	SCANport Terminal Base Unit

Module Type	Catalog Number	Description
120V ac Modules	1794-IA8	8 Input Module
	1794-IA8I	8 Isolated Input Module
	1794-IA16	16 Input Module
	1794-OA8	8 Output Module
	1794-OA8I	8 Isolated Output Module
	1794-OA16	16 Ouput Module
120V ac Modules	1794-IM8	8 Input Module
	1794-OM8	8 Output Module

3. In addition to ordering your FLEX I/O Modules, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

4. Record your selection in the bill of materials on page BOM-1.

E

1793 FLEX Integra

Rockwell Automation's Allen-Bradley brand of I/O expands its FLEX I/O family by providing smaller increments of I/O with the 1793 FLEX Integra family. The large family of FLEX I/O communication adapters and I/O modules are fully compatible with FLEX Integra, allowing maximum application coverage and cost reduction for existing FLEX I/O users, as well as users of other I/O. FLEX Integra consists of both 4 and 16 point I/O modules for 24V dc applications and three new analog I/O modules for system configuration flexibility.

DeviceNet CONFORMANCE TESTED

DeviceNet Features and Benefits

- re-application of FLEX I/O technology
- four or sixteen terminations per channel
- supports change-of-state, cyclic, and polled messaging for efficient communication
- remote diagnostics and status indicators for network and I/O
- adapter provides diagnostics for failed or removed I/O devices
- DIN-rail mounted
- supports auto device replacement

Product Features and Benefits

- fewer points in a package than FLEX I/O
- single integrated package: I/O module and terminal base as one unit
- short circuit protection
- small footprint
- spring and screw terminal varieties available

DeviceNet Details

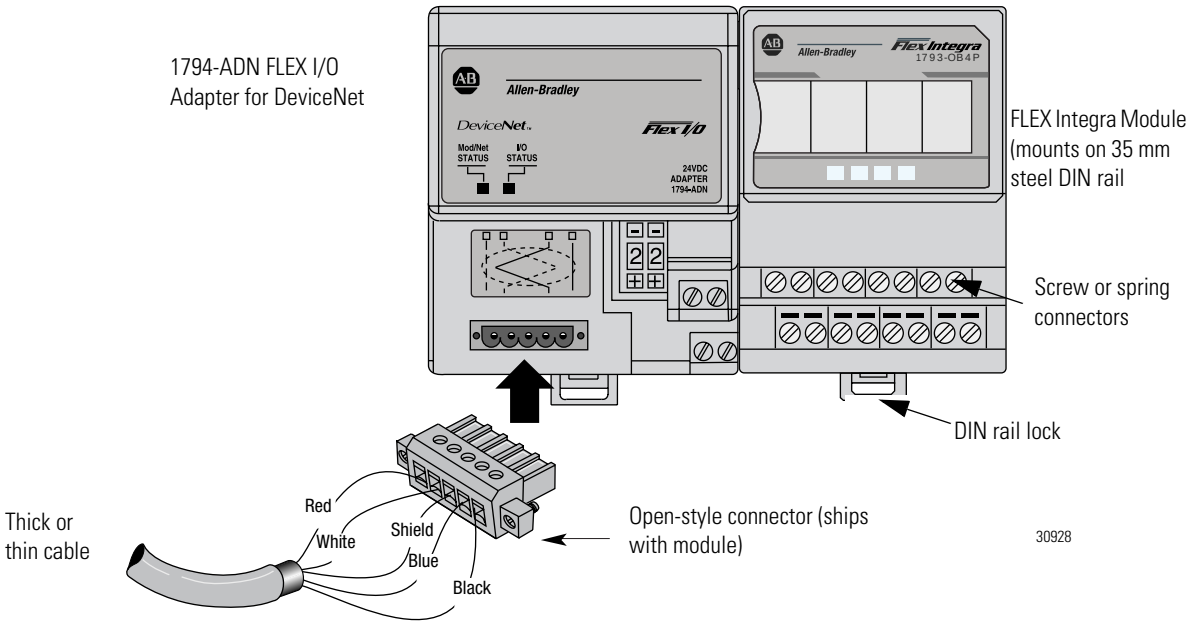
Feature	FLEX Integra Adapter
Explicit Peer-to-Peer Messaging	No
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	No
Faulted Address Recovery	No
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes Yes (inputs of 8 bytes or less only)
DeviceNet Current Draw	90 mA maximum
I/O Data Sizes (min/max)	varies depending on configuration; minimum 2 bytes for adapter

Configuration Information

Configure	By using
Baud Rate	Autobaud
Node Address/Parameters	RSNetWorx for DeviceNet

Physical Connection

You need the following components to connect the FLEX Integra modules to a DeviceNet network.



Related Publications

Title	Publication Number
FLEX I/O Brochure	1974-1.16
FLEX I/O Product Data	1794-2.1
FLEX I/O DeviceNet Adapter Installation Instructions	1794-5.14
DeviceNet Adapter Module User Manual	1794-6.5.5

Ordering Information

Follow the steps below to order FLEX I/O Modules:

1. Order FLEX I/O Modules with these catalog numbers:

Catalog Number	Description
1793-IB4	24V dc 4-point Digital Input Module (Screw Termination)
1793-OB4P	24V dc 4-point Digital Output Module (Screw Termination)
1793-IB2XOB2P	24V dc 2 Input 2 Output Digital Combo Module (Screw Termination)
1793-OW4	4 Relay Output Module (Screw Termination)
1793-IB4S	24V dc 4-point Digital Input Module (Spring Termination)
1793-OB4PS	24V dc 4-point Digital Output Module (Spring Termination)
1793-IB2XOB2PS	24V dc 2 Input 2 Output Digital Combo Module (Spring Termination)
1793-OW4S	4 Relay Output Module (Spring Termination)
1793-IE4	Current/Voltage 4-point Analog Input Module (Screw Termination)
1793-IE4S	Current/Voltage 4 point Analog Input Module (Spring Termination)
1793-OE2	Current/Voltage 2-point Analog Output Module (Screw Termination)
1793-OE2S	Current/Voltage 2-point Analog Output Module (Spring Termination)
1793-IE2XOE1	Combo Analog 2 Input 1 Output Module (Screw Termination)
1793-IE2XOE1S	Combo Analog 2 Input 1 Output Module (Spring Termination)
1793-IB16	24V dc 16-point Sink Digital Input Module (Screw Termination)
1793-IB16S	24V dc 16-point Sink Digital Input Module (Spring Termination)
1793-IV16	24V dc 16-point Source Digital Input Module (Screw Termination)
1793-IV16S	24V dc 16-point Source Digital Input Module (Spring Termination)
1793-OB16P	24V dc 16-point Source Digital Output Module (Screw Termination)
1793-OB16PS	24V dc 16-point Source Digital Output Module (Spring Termination)

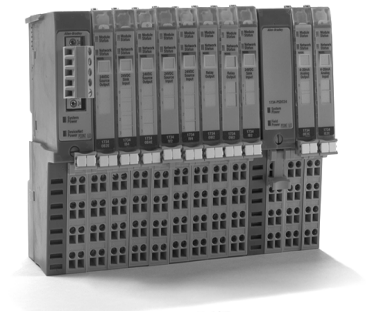
Catalog Number	Description
1793-OV16P	24V dc 16-point Sink Digital Output Module (Screw Termination)
1793-OV16PS	24V dc 16-point Sink Digital Output Module (Spring Termination)

2. In addition to ordering your FLEX I/O Modules, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

1734 POINT I/O Series



DeviceNet CONFORMANCE TESTED

POINT I/O is designed to handle applications where packaged I/O does not support the right mix of I/O, and a modular I/O structure does not have the right granularity of I/O for a given location. While POINT I/O addresses these issues, it also dramatically increases flexibility, and reduces installation and commissioning costs. This provides a lower overall cost of ownership. POINT I/O maximizes efficiency, ergonomics, and ease-of-use to help you continuously improve your methods of operation and keep you ahead with the best technology and services available in the world.

POINT I/O modules offer the granularity needed to reduce your system size and cost, while providing a variety of control system solutions. The complete POINT I/O system includes terminal bases, I/O modules, power supplies, and network interfaces. All modules plug together, and can be DIN-rail mounted vertically or horizontally.

DeviceNet Features and Benefits

- supports change-of-state, cyclic, polled, and bit strobed messaging
- up to 63 modules may be connected to a single DeviceNet adapter
- interfaces up to 252 discrete I/O points or 128 analog channels per adapter to the DeviceNet network
- remote diagnostics and status indicators for network and I/O
- adapter provides diagnostics for failed and removed I/O devices

Product Features and Benefits

- add only the I/O channels required
- no tools required for installation
- mechanical keying for field-side protection allows you to prevent incorrect module insertion into a preconfigured terminal base
- electronic module ID allow for system-side protection
- module and terminal independence
- remove cartridge and terminations independently without interrupting communications on the network
- light-gray terminals facilitate visual inspection and verification
- removable termination facilitates system installation, commissioning, and maintenance
- DIN-rail disconnect system allows you to vertically remove components without interrupting adjacent components

DeviceNet Details

Feature	POINT I/O
Explicit Peer-to-Peer Messaging	No
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	Yes
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes Yes
DeviceNet Current Draw	varies depending on configuration
I/O Data Sizes (min/max)	varieis depending on configuration

Configuration Information

Configure	By using
Baud Rates	Autobaud or via RSNetWorx for DeviceNet Node Commissioning Tool
Node Addresses	RSNetWorx for DeviceNet Node Commissioning Tool
Parameters	**1734-ADN and associated modules:** Application in RSNetWorx for DeviceNet **1734-PDN:** via Electronic Data Sheets from www.ab.com/networks/eds

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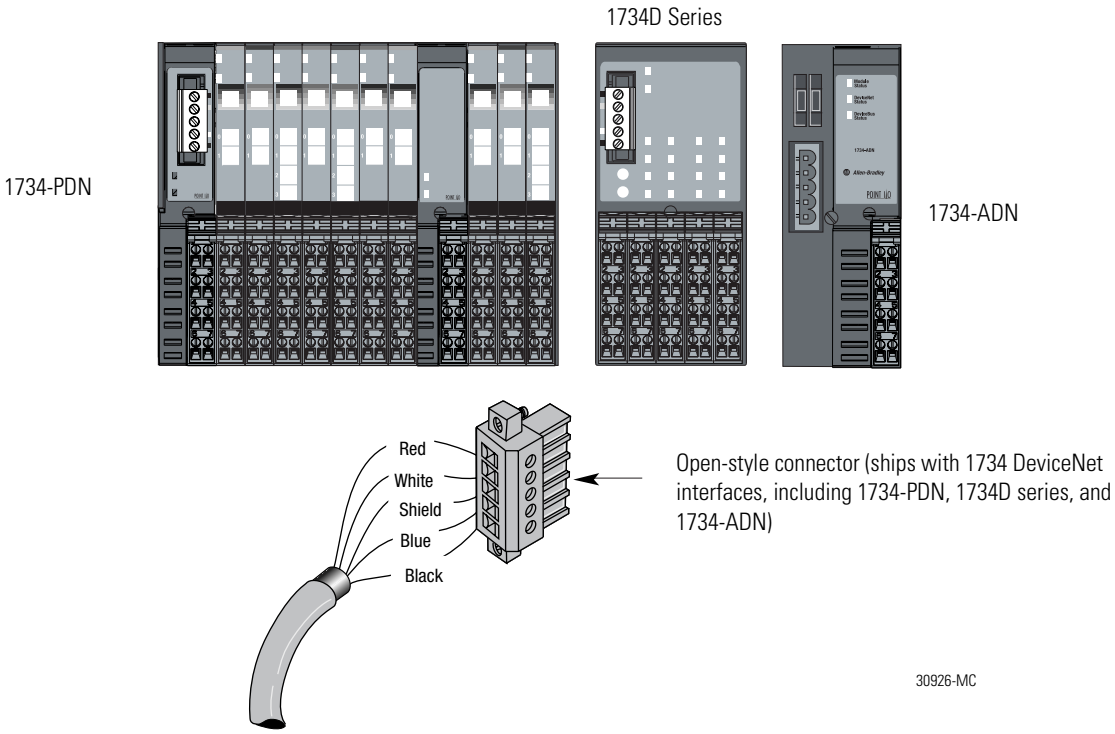
Physical Connection

You need one of the following components to connect the POINT I/O modules to a DeviceNet network.



Related Publications

Title	Publication Number
POINT I/O Technical Data Sheet	1734-2.1
POINT I/O System Brochure	1734-BR001B-EN-P
POINT I/O User Manual	1734-6.5.1

Ordering Information

Follow the steps below to order POINT I/O Modules:

1. Order POINT I/O Modules with these catalog numbers:

Catalog Number	Description
1734-ADN	24V cd DeviceNet Adapter Module
1734D-IA16	120V ac 16 Input Screw Module
1734D-IA16S	120V ac Input Spring Module
1734D-IA8XOA8	120V ac 8 Input 8 Output Screw Module
1734D-IA8XOA8S	120V ac 8 Input 8 Output Spring Module
1734D-IA8XOW8	120V ac 8 Inputs 8 Relay Outputs Screw Module
1734D-IA8XOW8S	120V ac 8 Inputs 8 Relay Outputs Spring Module
1734D-IB16	24V dc 16 Input Screw Module
1734D-IB16S	24V dc 16 Input Spring Module
1734D-IB8XOB8E	24V dc 8 Sink Input 8 Source Output Screw Module
1734D-IB8XOB8ES	24V dc 8 Sink Input 8 Source Output Spring Module
1734D-IB8XOW8	24V dc 8 Sink Input 8 Relay Output Screw Module
1734D-IB8XOW8S	24V dc 8 Sink Input 8 Relay Output Spring Module
1734-EP24DC	24V dc Power US Extension Module
1734-FPD	Field Potential Distributor
1734-IA2	120V ac 2 Channel Input Module
1734-IB2	24V dc 2 Channel Sink Input Module
1734-IB4	24V dc 4 Channel Sink Input Module
1734-IE2C	24V dc 2 Channel Analog Current Input Module
1734-IE2V	24V dc 2 Channel Analog Voltage Input Module

Catalog Number	Description
1734-IJ	5V dc Incremental Encoder Module
1734-IK	24V dc Incremental Encoder Module
1734-IM2	230V ac 2 Channel Input Module
1734-IR2	24V dc 2 Channel RTD Input Module
1634-IT21	24V dc 2 Channel Thermocouple Input Module
1734-IV2	24V dc 2 Channel Source Input Module
1734-IV4	24V dc 4 Channel Source Input Module
1734-OA2	120/230V ac 2 Channel Output Module
1734-OB2E	24V dc 2 Channel Source Output Module
1734-OB4E	24V dc 4 Channel Source Output Module
1734-OE2C	2V dc 2 Channel Analog Current Output Module
1734-OE2V	2V dc 2 Channel Analog Voltage Output Module
1734-OW2	24V dc Coil N.O. DPST Relay Module
1734-PDN	DeviceNet Interface Module
1734-RTB	Replacement IEC Screw Terminal Block
1734-RTB3	Replacement 12 Position IP20 Screw Terminal Block
1734-RTB3S	Replacement 12 Position IP20 Spring Terminal Block
1734-RTBS	Replacement IEC Spring Terminal Block
1734-TB	Module Base with Removeable IEC Screw Terminals
1734-TB3	12 Position IP20 Screw Terminal Base
1734-TB3S	12 Position IP20 Spring Terminal Base
1734-TBCJC	Screw Terminal Base Cold Junction Compensation
1734-TBSCJC	Spring Terminal Base Cold Junction Compensation
1734-TBS	Module Base with Removeable IEC Spring Terminals
1734-VHSC24	24V dc Very High Speed Counter with Source Inputs
1734-VHSC5	5V dc Very High Speed Counter with Source Outputs

2. In addition to ordering your POINT I/O Modules, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

1769 Compact I/O

DeviceNet CONFORMANCE TESTED

1769 Compact I/O is a new PLC-style I/O platform, offering industry leading features. It utilizes the latest design technology for superior performance, functionality, and ease of use. It can be used to expand the local base I/O of Allen-Bradley packaged controllers such as the MicroLogix 1500 or as distributed I/O with the appropriate adapter.

Compact I/O has two analog modules which provide 14 bits maximum resolution. This allows the modules to be used in applications where the need to detect small changes in the analog input is vital. Compact I/O also helps you make small changes to the final control elements.

Product Features and Benefits

- innovative rackless design, which reduces system costs and inventory
- modular, high-density I/O termination to reduce panel space requirements
- integrated high-performance serial I/O bus
- feature-rich I/O functionality to address a wide range of applications
- front removal/insertion, which reduces time for initial system assembly and product replacement
- broad application coverage through 24V dc sink/source and 120/240V ac I/O, relay, and analog I/O

DeviceNet Details

Feature	Compact I/O
Explicit Peer-to-Peer Messaging	No
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	Yes
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes Yes
DeviceNet Current Draw	90 mA maximum

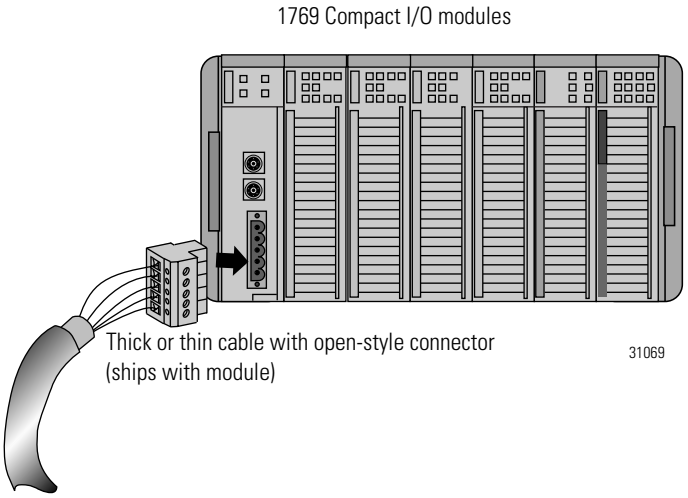
Feature	Compact I/O
I/O Data Sizes (min/max)	varies depending on configuration (minimum 4 bytes input for adapter)

Configuration Information

Configure	By using
Baud Rates/Node Address/Parameters	Autobaud
Node Addresses	Rotart switches or via RSNetWorx for DeviceNet Node Commissioning Tool
Parameters	Application in RSNetWorx for DeviceNet

Physical Connection

You need the following components to connect the Compact I/O Modules to a DeviceNet network.



Related Publications

Title	Publication Number
1769 Compact I/O Analog I/O Modules Product Profile	1769-1.2

Ordering Information

Follow the steps below to order Compact I/O Modules:

1. Order Compact I/O Modules with these catalog numbers:

Catalog Number	Description
1769-IA16	16-point 120 V ac Discrete Input Module
1769-IQ16	16-point 24 V dc Sink/Source Discrete Input Module
1769-IM12	12-point 240 V ac Discrete Input Module
1769--OA8	8-point 120/240 V ac Discrete Output Module
1769-OB16	16-point 24 V dc Sourcing Discrete Output Module
1769-OV16	16-point 24 V dc Sinking Discrete Output Module
1769-OW8	8-point V ac/dc Relay Discrete Output Module
1769-IQ6XOW4	Combination Module, 6-point 24 V dc Sink/Source Input, 4-point V ac/dc Relay Output Module
1769-IF4	4 Channel Analog Current/Voltage Input Module
1769-OF2	2 Channel Analog Current/Voltage Output Module

2. Order these accessories:

Catalog Number	Description
1769-ECR	Right End Cap Terminator
1769-ADN	Compact I/O DeviceNet Adapter

3. In addition to ordering your Compact I/O Modules, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

4. Record your selection in the bill of materials on page BOM-1.

Notes:

Sensors

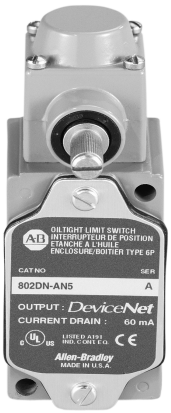
The Allen-Bradley line of presence sensing products has been at the top of the industry for over 60 years. Each sensor is known for its reliability and is developed and produced in facilities registered to the rigorous ISO 9001 standard. The result is a full line of tough sensors that are able to stand up to harsh industrial conditions.

For DeviceNet, there are four distinct families of Allen-Bradley sensors:

SmartSight 9000 Photoelectric Sensors - excellent for harsh environments such as breweries and food processing plants. They can tolerate temperatures up to 70º C, and are designed to withstand high-pressure washdowns and many harsh solvents.

- **RightSight™ Photoelectric Sensors** - smaller than the SmartSight 9000 sensors, but contain many of the same features. These sensors are a perfect solution for material handling and packaging industries where shorter sensing distances are required.

- **871TM Inductive Proximity Sensors** - an excellent solution for metalworking, food processing and material handling industries where simply the environment alone has been tough on sensors. These sensors are equipped with an abrasion resistant, fire retardant, outdoor approved, flexible cable that exceeds the SOOW-A rating.



- **Bulletin 802DN Limit Switches** - ideal for applications which require heavy-duty pilot ratings, a high degree of versatility and rugged, oil-tight construction. Their patented 3-way shaft seal design offers superior fluid resistance.

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SmartSight 9000 Photoelectric Sensor

SmartSight 9000 Photoelectric Sensors are designed for use in the most harsh industrial environments. The larger optics mean higher operating margins and longer sensing ranges.

DeviceNet Features and Benefits

- selectable change-of-state and strobing protocols
- two independent diagnostic (dirty lens) outputs
- light operate/dark operate configurable over the network
- local and remote self-teach operation
- configurable timer, on/off, one-shot time delay
- configurable counter
- motion/jam detect

Product Features and Benefits

- NEMA 6P, IP67, 1200 psi washdown rated housing
- wide variety of sensing modes
- three highly visible LED indicators, visible from 360°
- choose from micro or mini style connectors or an attached 2m CPE drop cable

DeviceNet Details

Feature	SmartSight 9000
Explicit Peer-to-Peer Messaging	No
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	No
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb No
Master/Scanner	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes No No Yes

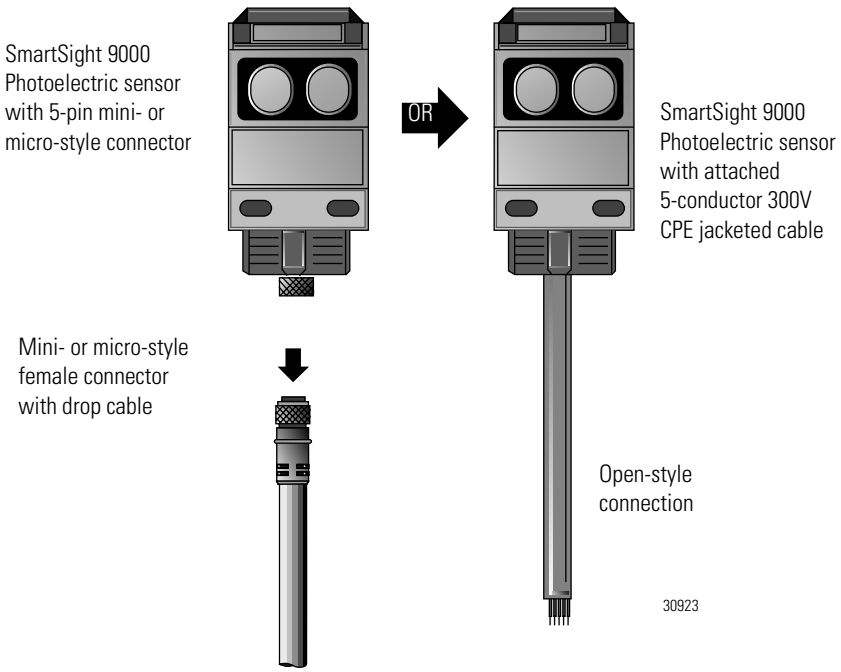
Feature	SmartSight 9000
DeviceNet Current Draw	70 mA
I/O Data Sizes (min/max)	In: 1 byte (2 bits used) Out: 0 byte

Configuration Information

Configure	By using
Baud Rates/Node Addresses	Pushbutton or via RSNetWorx for DeviceNet Node Commissioning Tool
Parameters	EDS files downloaded from http://www.ab.com/networks/eds

Physical Connection

You can choose from the following methods to connect SmartSight 9000 Sensors to a DeviceNet network.



Related Publications

Title	Publication Number
Sensors Catalog	C114-CA001A-EN-P
Sensors Today	GSM900
DeviceNet Media Catalog Guide	1485-CG001A-EN-P

Ordering Information

Follow the steps below to order Sensors:

1. Order Sensors with these catalog numbers:

Sensing Mode	Connection Type	SmartSight 9000
Retroreflective	2m Cable Micro QD Mini QD	42GNU-9020 42GNU-9020-QD 42GNU-9020-QD1
Polarized Retroreflective	2m Cable Micro QD Mini QD	42GNU-9220 42GNU-9220-QD 42GNU-9220-QD1
Standard Diffuse	2m Cable Micro QD Mini QD	42GNP-9020 42GNP-9020-QD 42GNP-9020-QD1
Transmitted Beam	Light Source Models 2m Cable Micro QD Mini QD Receiver Models 2m Cable Micro QD Mini QD	Light Source Models 42GNL-9040 42GNL-9040-QD 42GNL-9040-QD1 Receiver Models 42GNR-9020 42GNR-9020-QD 42GNR-9020-QD1
IR Glass Fiber Optic	2m Cable Micro QD Mini QD	42GNF-9020 42GNF-9020-QD 42GNF-9020-QD1
Visible Red Plastic Fiber Optic	2m Cable Micro QD Mini QD	42GNF-9120 42GNF-9120-QD 42GNF-9120-QD1
ClearSight Clear Object Detector	2m Cable Micro QD Mini QD	42GNC-9120 42GNC-9120-QD 42GNC-9120-QD1

TIP For information on sensing ranges, refer to the Allen-Bradley Sensors Catalog, publication number C114-CA001A-EN-P.

2. In addition to ordering your Sensors, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

RightSight™ Photoelectric Sensor

RightSight Photoelectric Sensors are smaller than the SmartSight 9000 sensors, but contain many of the same features. The small 18mm package can be mounted by the base, nose, or by the thru-holes for flexible installation.

DeviceNet CONFORMANCE TESTED

DeviceNet Features and Benefits

- selectable change-of-state and strobing protocols, and static or dynamic margin (dirty lens) diagnostics
- automatic baud rate detection
- two independent diagnostic (dirty lens) outputs
- configurable timer, on/off and one-shot time delays
- configurable counter
- motion/jam detect

Product Features and Benefits

- NEMA 4X, IP67 1200 psi washdown rated housing
- micro QD connection
- wide variety of sensing modes
- flexible 18mm mounting options

DeviceNet Details

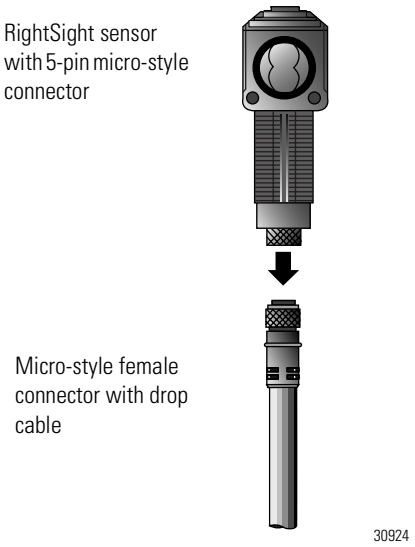
Feature	42EF RightSight
Explicit Peer-to-Peer Messaging	No
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	No
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes No No Yes
DeviceNet Current Draw	65 mA max @ 11V
I/O Data Sizes (min/max)	In: 1 byte Out: 0 byte

Configuration Information

Configure	By using
Baud Rates	Autobaud or via RSNetWorx for DeviceNet Node Commissioning Tool
Node Addresses	Node commissioning via RSNetWorx for DeviceNet Node Commissioning Tool
Parameters	EDS files downloaded from http://www.ab.com/networks/eds

Physical Connection

You need the following components to connect the RightSight Sensor to a DeviceNet network.



Related Publications

Title	Publication Number
Sensors Catalog	C114-CA001A-EN-P
Sensors Today	GSM900
DeviceNet Media Catalog Guide	1485-CG001A-EN-P

Ordering Information

Follow the steps below to order Sensors:

1. Order Sensors with these catalog numbers:

Sensing Mode	Connection Type	Catalog Number
Polarized Retroreflective	5-pin Micro QD	42EF-P2LDB-F5
Standard Diffuse	5-pin Micro QD	42EF-D1LDAK-F5

Sensing Mode	Connection Type	Catalog Number
Sharp Cutoff Diffuse	5-pin Micro QD	42EF-S1LDA-F5
Background Suppression	5-pin Micro QD	42EF-B1LDBC-F5 (50mm) 42EF-B1LDBE-F5 (100mm)
Glass Fiber Optic	5-pin Micro QD	42EF-G1LDA-F5
Transmitted Beam	2m 300V Cable 4-pin Micro QD 5-pin Micro QD	Light Source Models 42EF-E1EZB-A2 42EF-E1EZB-F4 42EF-E1EDZB-F5
	5-pin Micro QD	Receiver Models 42EF-R9LDBV-F5 (4m) 42EF-R9LDB-F5 (20m)

TIP

For information on sensing ranges, refer to the Allen-Bradley Sensors Catalog, publication number C114-CA001A-EN-P.

2. In addition to ordering your Sensors, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

Bulletin 871TM Inductive Proximity Sensors

The DeviceNet 871TM Inductive Proximity Sensor's embedded intelligence and DeviceNet capabilities create a more efficient network because the sensor can be configured to support either change-of-state or strobed methods of data exchange. Its "Target Too Close" diagnostic helps prevent target-to-sensor collisions, the leading cause of proximity sensor failure. The "Target Too Far" diagnostic signals those objects that are outside the sensing range—possibly leading to missed targets or interruptions in the machine process. This sensor also has a "Teach/Learn" feature which allows the sensor to ignore a metal background within the sensing area and sense only the desired target. This results in the first background-suppression inductive proximity sensor.

DeviceNet Features and Benefits

- discrete and analog outputs
- supports autobaud
- uses electronic data sheets (EDS) to update programming
- teach and learn function
- timing functions: on, off, and one-shot delay configurations
- enhanced diagnostic capabilities (target too close, target too far, target always in, coil operational)
- configurable normally open/normally closed
- motion and jam detection and counter output

Product Features and Benefits

- high-strength stainless steel face and barrel
- 1200 psi (8,270 kPa) washdown capability
- available with mini or micro QD, or 2m CPE jacketed cable

DeviceNet Details

Feature	871TM Proximity
Explicit Peer-to-Peer Messaging	No
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	Yes
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes

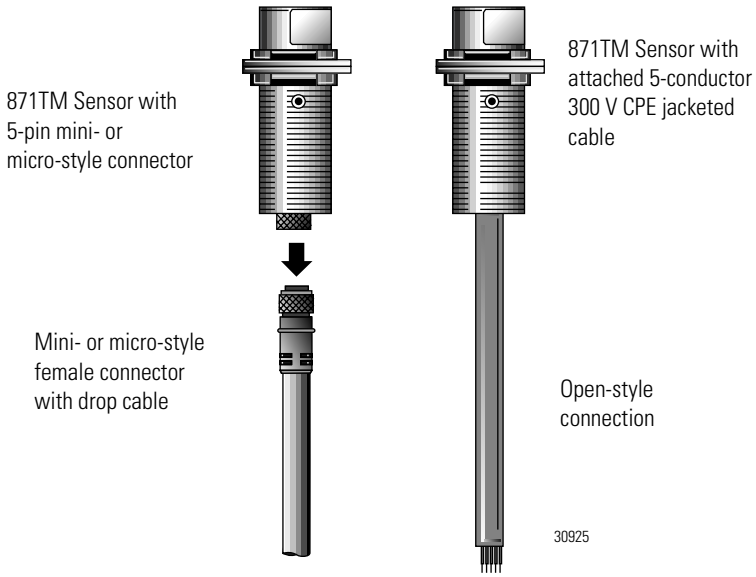
Feature	871TM Proximity
Master/Scanner	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes No No Yes
DeviceNet Current Draw	60 mA
I/O Data Sizes (min/max)	In: 1 or 2 bytes Out: 0 byte

Configuration Information

Configure	By using
Baud Rates	Autobaud or via RSNetWorx for DeviceNet Node Commissioning Tool
Node Addresses	Node commissioning via RSNetWorx for DeviceNet Node Commissioning Tool
Parameters	EDS files downloaded from http://www.ab.com/networks/eds

Physical Connection

You need the following components to connect the 871TM Sensor to a DeviceNet network.



Related Publications

Title	Publication Number
Hot Topics	871TM-5.0
Sensors Today	GSM900
Sensors Catalog	C114-CA001A-EN-P
DeviceNet Media Catalog Guide	1485-CG001A-EN-P

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Ordering Information

Follow the steps below to order Sensors:

1. Order Sensors with these catalog numbers:

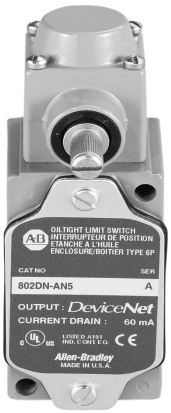
Barrel Style	Connection Type	Shielded	Unshielded
18mm	Cable Mini QD Micro QD	871TM-D5ED18-S2 871TM-D5ED18-N5 871TM-D5ED18-D5	871TM-D8ED18-S2 871TM-D8ED18-N5 871TM-D8ED18-D5
30mm	Cable Mini QD Micro QD	871TM-D10ED30-S2 871TM-D10ED30-N5 871TM-D10ED30-D5	871TM-D15ED30-S2 871TM-D15ED30-N5 871TM-D15ED30-D5

2. In addition to ordering your Sensors, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

802DN DeviceNet Limit Switch



Bulletin 802DN DeviceNet Limit Switches have been designed with the same rugged features of the 802T NEMA Limit Switch, in addition to DeviceNet features and benefits. These Limit Switches utilize DeviceNet to address primary customer needs such as increased information flow, affordable DeviceNet connectivity, and a reduction in down time by using advanced diagnostic capabilities.

The Wide Belt Roller version comes packaged with a special lever arm, specifically designed for precise position detection of conveyor belts.

DeviceNet Features and Benefits

- direct connection to DeviceNet
- autobaud
- supports change-of-state (COS) or strobing protocol

Product Features and Benefits

- NEMA 13 and IP65 (IEC529)
- user-selectable discrete or analog output
- dual outputs with distinct programmable angles to operate
- teach and learn angle
- output programmable to N.O. or N.C.
- programmable travel to reset (hysteresis)
- configurable counters with resets on each output
- multiple timing functions
- programmable in 1ms increments: on delay timer, off delay timer, one shot timer
- multiple maintenance warnings
- user defined counter preset used for tracking total operations and maintenance alarming

DeviceNet Details

Feature	802DN Limit Switch
Explicit Peer-to-Peer Messaging	No
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	Yes
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes No No Yes
DeviceNet Current Draw	60 mA
I/O Data Sizes (min/max)	In: 1 or 2 bytes Out: 0 bytes

Configuration Information

Configure	By using
Baud Rates	Autobaud or via RSNetWorx for DeviceNet Node Commissioning Tool
Node Addresses	Node commissioning via RSNetWorx for DeviceNet Node Commissioning Tool
Parameters	Electronic Data Sheets (EDS) in RSNetWorx

Physical Connection

You need the following components to connect the 802DN Limit Switch to a DeviceNet network.

Related Publications

Title	Publication Number
Sensors Today	GSM900
Sensors Catalog	C114-CA001A-EN-P
DeviceNet Media Catalog Guide	1485-CG001A-EN-P

Ordering Information

Follow the steps below to order Limit Switches:

1. Order Limit Switches with these catalog numbers

Lever Movement	Connection Type	Catalog Number
Clockwise or Counterclockwise (Spring Return)	Micro Mini 2 m Cable	802DN-AD5 802DN-AN5 802DN-AS2
Wide Belt Roller Lever Arm Model	Micro Mini 2m Cable	802DN-WBRD5 802DN-WBRN5 802DN-WBRS2

TIP

For more information on sensing ranges, refer to the Allen-Bradley Sensors Catalog, publication number C114-CA001A-EN-P.

2. In addition to ordering your Limit Switches, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

Notes:

Operator Interfaces

The operator interfaces offered by Rockwell Automation for DeviceNet range from PanelView™ standard terminals to tower lights to push button stations. With any or a combination of these interfaces, you can broaden the range of communication status reporting, and fault and operational information gathering. These devices have worked hard within the automotive, pulp and paper, water and wastewater, and petrochemical industries for many years.

- **PanelView Standard Operator Terminals** - these terminals are used in applications where extensive alarm capabilities including alarm history are important. These terminals display important data for triggered alarms and allow operators to control operations from keypads and/or touchscreens.

- **Bulletin 2705 RediSTATION Operator Interface** - a NEMA-style pushbutton/pilot light unit with the added capability of DeviceNet communication. You can purchase a pre-assembled station with three 800T devices, or build your own.

- **Bulletin 855T Control Tower™ Stack Lights** - offer a visual and audible sign to enhance safety and increase productivity in your environment. The Bulletin 855T's are a full line of the most versatile products, offering features such as "no tools required" assembly, and superior stacking configurations.

- **Bulletin 800E Push Button Stations** - Monitor and control your processes with Bulletin 800E Push Button Stations, featuring up to 4 external I/O points with quick-disconnect connectors.

- **Bulletin 800E Pendant Stations** - Rockwell Automation now adds Push Button Pendant Stations to the Allen-Bradley Push Button product family. These new pendant stations are designed with features and options that offer the flexibility you need for your applications.

- **8520-MTBD Machine Tool Builder Panel** - The Machine Tool Builder Panel provides a pre-assembled, ready-to-use operator interface for general motion, computer numerical control, or special applications.

PanelView Operator Interfaces

PanelView™ standard operator terminals feature brilliant graphics in color, gray scale, and monochrome in space saving flat panel and CRT designs. They offer high performance interface functionality including built-in alarms, ASCII input, universal language and floating point support, and online printing. All terminal sizes can bring intuitive operator screens to any DeviceNet application.

DeviceNet Features and Benefits

- supports change-of-state, cyclic, polled, and peer-to-peer messaging for efficient communication
- enhances troubleshooting on the DeviceNet network
- communicates with a range of devices on the network

Product Features and Benefits

- keypad, touch only or combination touch screen and keypad terminals offer convenient and flexible choices for operator input
- pixel graphic display enhances operator screens
- extensive alarm capabilities including alarm history to record and display important data on triggered alarms
- optional RS-232 printer port
- alarm banner notifies the operator when an alarm occurs by displaying a message and buttons for responding to the alarm
- PanelBuilder32™ Software for configuration purposes

DeviceNet Details

Feature	PanelView
Explicit Peer-to-Peer Messaging	Yes
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	Yes
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No

Feature	PanelView
I/O Slave Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes No
DeviceNet Current Draw	90 mA max @ 11V
I/O Data Sizes (min/max)	In: 0-64 words Out: 0-64 words

Configuration Information

Configure	By using
Baud Rates/Node Addresses	RSNetWorx for DeviceNet
Parameters	PanelBuilder32 Configuration Software

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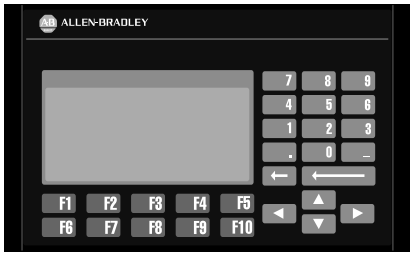
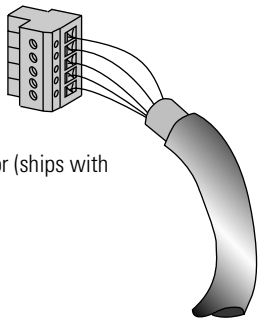
Physical Connection

You need the following components to connect a PanelView interface to a DeviceNet network.

PanelView Standard Operator Terminal





Open-style connector (ships with Operator Interface)

31005

Related Publications

Title	Publication Number
PanelView Standard Operator Terminals User Manual	2711-UM014B-EN-P
PanelBuilder32 Software Technical Data	2711-TD005C-EN-P
DeviceNet Communications for PanelView Terminals User Guide	2711-6.0.4

Ordering Information

Follow the steps below to order the PanelView terminal:

1. Order the PanelView terminal with these catalog numbers:

Keypad Catalog Number[1]	Keypad and Touch Catalog Number[1]	Touch Terminal Catalog Number[1]	Description
2711-K3A10L1	N/A	N/A	PanelView 300 Monochrome, DeviceNet Communication & RS-232 Printer Port
2711-K5A10	2711-B5A10	2711-T5A10L1	PanelView 550 Monochrome, DeviceNet Communication & RS-232 Printer Port
2711-K6C10	2711-B6C10	2711-T6C10L1	PanelView 600 Color, DeviceNet Communication & RS-232 Printer Port
2711-K9C10	N/A	2711-T9C10	PanelView 900 Color, DeviceNet Communication & RS-232 Printer Port
2711-K10G10	N/A	2711-T10G10	PanelView 1000 Gray Scale, DeviceNet Communication & RS-232 Printer Port
2711-K10C10	N/A	2711-T10C10	PanelView 1000 Color, DeviceNet Communication & RS-232 Printer Port
2711-K14C10	N/A	2711-T14C10	PanelView 1400 Color, DeviceNet Communication & RS-232 Printer Port

[1] To order a PanelView 550, 600, 900, or 1000 terminal with dc power instead of ac power, add L1 to the catalog number. PanelView 300, 550 Touch, and 600 Touch are 24V dc only.

2. Order PanelBuilder Configuration Software to configure parameters.

Description	Catalog Number
PanelBuilder32 Configuration Software	2711-ND3

3. Order RSNetWorx for DeviceNet to commission nodes and set up baud rates.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

4. Record your selection in the bill of materials on page BOM-1.

Bulletin 2705 RediSTATION Operator Interface

The Bulletin 2705 RediSTATION is a three-pushbutton unit that operates as a slave device on the DeviceNet network. The station receives all power directly from the DeviceNet connection, eliminating the need for a separate power supply. A controller with a DeviceNet scanner module (DeviceNet Master) controls the RediSTATION operations by reading inputs and controlling outputs.

The RediSTATION supports three 800T devices in a standard or custom configuration. The standard unit has two pushbuttons (start and stop), and one pilot light which are all pre-wired for easy installation. Custom build stations support a variety of 800T devices that are pre-wired or customer installed.

DeviceNet Features and Benefits

- DIP-switch configuration of node address, communication rate, flashing pilot light frequency

Product Features and Benefits

- indication of network operation, panel operation, and burned out or missing bulb
- die cast enclosure complies with NEMA standards
- surface mounting device allows for easy installation
- sealed mini-connector or terminal block provides error-proof connection
- input status on state of outputs (normal or flash) from network
- DeviceNet interface communication board supporting four inputs and two outputs for custom applications
- I/O connector supports a variety of operators that are easily installed in the field
- bi-color module/network status LED provides visual indication of network and output operations

DeviceNet Details

Feature	RediSTATION
Explicit Peer-to-Peer Messaging	Yes (when connected to a master)
I/O Peer-to-Peer Messaging	No
Faulted Address Recovery	No

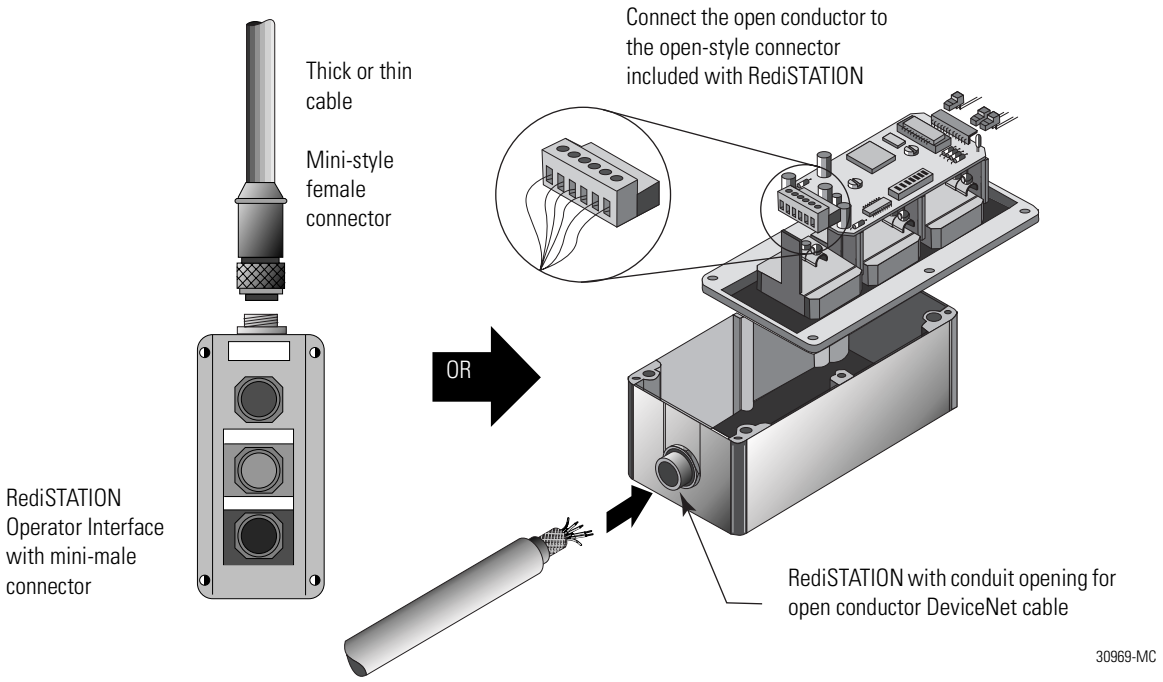
Feature	RediSTATION
Baud Rates Autobaud	125Kb, 250Kb, 500Kb No
Master/Scanner	No
I/O Slave Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 No Yes No No
DeviceNet Current Draw	700 mA
I/O Data Sizes (min/max)	In: 6 bit Out: 4 bit

Configuration Information

Configure	By using
Baud Rates,/Node Addresses	DIP switches
Parameters	via EDS through RSNetWorx for DeviceNet

Physical Connection

You need the following components to connect a RediSTATION to a DeviceNet network.



Related Publications

Title	Publication Number
RediSTATION User Manual	2705-UM001A-US-P

Ordering Information

Follow the steps below to order the RediSTATION:

1. Order the RediSTATION with this catalog number:

Description	Catalog Number
RediSTATION Standard Configuration, Closed-style Connection (Mini-male), START and STOP Buttons, 1 Pilot Light	2705-T3DN1A42A
RediSTATION Standard Configuration, Open-style Connection, START and STOP Buttons, 1 Pilot Light	2705-T3DN1B42A
DeviceNet Communication Board (with I/O Connector Cables and DeviceNet PCB Terminal Block)	2705-DN42

2. Record your selection in the bill of materials on page BOM-1.

Bulletin 855T Control Tower Stack Lights

DeviceNet CONFORMANCE TESTED

The Bulletin 855T 70 mm Control Tower™ Stack Lights are a full line of versatile and easy to use products, offering features such as “no tools required” assembly and superior stacking configurations. The Stack Lights transmit signals both visually and audibly, increasing productivity and safety in any environment. In any application, Control Tower Stack Lights provide efficient control and automatic monitoring. When used with a programmable controller or sensor, these Stack Lights can signal breakdowns and material shortages, helping keep downtime in check.

DeviceNet Features and Benefits

- all DeviceNet functionality contained in the base
- all power and signal provided by DeviceNet—no additional wiring
- flash firmware upgrades

Product Features and Benefits

- horizontal, vertical or pole mounting
- sound modules feature field-adjustable tone, volume, frequency and speed control settings
- indication of burned out or missing incandescent bulb
- different operating modes allow for different module flash rates and patterns

- works with all standard 24V modules
- light modules and bases UL listed and Type 4/4X/13, IP65 rated
- light with sound modules UL listed and Type 12, IP54 rated

DeviceNet Details

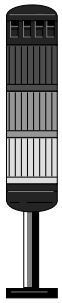
Feature	Bulletin 855T Stack Lights
Explicit Peer-to-Peer Messaging	No
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	No
Faulted Address Recovery	No
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 No Yes No No
DeviceNet Current Draw	70 mA + module current draw
I/O Data Sizes (min/max)	1 byte in/1 byte out

Configuration Information

Configure	By using
Baud Rates	Autobaud (default) or RSNetworx for DeviceNet Node Commissioning Tool
Node Addresses	Rotary Switches or RSNetWorx for DeviceNet Node Commissioning Tool
Parameters	Rotary Switches or Autobaud via RSNetWorx for DeviceNet

Physical Connection

The DeviceNet base comes prewired with a micro-male connector, a stripped lead cable, or a mini-male connector.



Related Publications

Title	Publication Number
Pocket Selection Guide	855T-SG001A-US-P
DeviceNet Stack Lights with Mini Connector Product Profile	855T-PP003A-EN-P

Ordering Information

855T DeviceNet Control Tower Stack Lights are available in 6 different base styles (listed below). You can also choose from two cable types and two base colors. Catalog numbers are built by selecting the appropriate features and options.

1. Order 855T DeviceNet Control Tower Stack Lights with the appropriate catalog number. The following table shows you how to construct the catalog number to include the features you desire:

   Example catalog number: 855T-DM1BCB

Bulletin:	Network:	Cable Type:	Color:	Base Type:
855T-	**D** (DeviceNet)	**M1** - 1m Micro Connector **S2** - 2m Stranded Wire **L1** - 1m Mini Connector	**B** - Black **G** - Gray	**CB** - Surface 1/2" NPT Conduit Mount **SB** - Surface PG16 Conduit Mount **VM** - Vertical Mount **PM10** - 10cm Pole Mount **PM25** - 25cm Pole Mount **TM** - 25mm Diameter Tube Mount

2. Record your selection in the bill of materials on page BOM-1.

Bulletin 800E Push Button Stations

Bulletin 800E Push Button Stations offer a robust means of monitoring and controlling your processes. These stations combine DeviceNet features such as offline node recovery and auto-device replacement with an industrially proven, rugged design.

DeviceNet Features and Benefits

- equipped with DeviceLogix™ for local logic processing
- DeviceNet voltage measurement at the node

Product Features and Benefits

- available in 2-, 3-, and 4-hole versions
- up to 4 external I/O points with quick disconnect connections
- hard-wired E-stop contacts available to meet safety requirements
- choice of 23 operators, 21 color/text options, and 22 I/O variations

DeviceNet Details

Feature	800E Push Button Station
Explicit Peer-to-Peer Messaging	Yes
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	Yes
Faulted Address Recovery	Yes
Baud Rates Autobaud Auto Device Replacement	125Kb, 250Kb, 500Kb Yes Yes
Master/Scanner	No
I/O Slave Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes No
DeviceNet Current Draw	150 mA (930 mA max. with external I/O)
I/O Data Sizes (min/max)	Configurable up to 8 in, 2 out (default is 2 in, 1 out)

Configuration Information

Configure	By using
Baud Rates	Rotary Switches or Autobaud
Node Addresses	Rotary Switches or RSNetWorx for DeviceNet Node Commissioning Tool
Parameters	RSNetWorx for DeviceNet

Physical Connection

The Bulletin 800E Station receives all power and communications through the DeviceNet Cable. A separate power supply is not required. The Station connects to the DeviceNet network through a standard micro connector.

Related Publications

Title	Publication Number
DeviceNet Push Button Station User Manual	800E-UM002A-EN-P
The Time Saving Product Line - 800E Selection Guide	800E-SG001A-US-P
DeviceLogix User Manual	ACIG-UM001A-EN-P

Ordering Information

Follow the steps below to order the Bulletin 800E Push Button Station:

1. Because of the number of catalog numbers associated with the Bulletin 800E Push Button Station, contact your Rockwell Automation representative or local Allen-Bradley Distributor to order.

2. In addition to ordering your Push Button Station, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

Bulletin 800E Pendant Stations

The Bulletin 800E Pendant Station line offers a DeviceNet connection for applications where network communication is desired. All of the functionality for the DeviceNet interface is contained within the housing. The entire unit is powered from the DeviceNet network. A separate power supply is not required.

DeviceNet Features and Benefits

- completely powered by the network
- software-settable node address

Product Features and Benefits

- can be hung in place anywhere in a DeviceNet network
- available with 1 pushbutton and 1 pilot light
- molded-in cable strain relief hook
- choice of yellow or black high-impact, wear-resistant housing

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DeviceNet Details

Feature	800E Pendant Station
Explicit Peer-to-Peer Messaging	No
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	Yes
Faulted Address Recovery	No
Baud Rates Autobaud Auto Device Replacement	125Kb, 250Kb, 500Kb Yes Yes
Master/Scanner	No
I/O Slave Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes No No Yes
DeviceNet Current Draw	50 mA)
I/O Data Sizes (min/max)	In: 1 byte Out: 1 byte

Configuration Information

Configure	By using
Baud Rates	Autobaud
Node Addresses	RSNetWorx for DeviceNet Node Commissioning Tool
Parameters	RSNetWorx for DeviceNet

Physical Connection

Connect a Bulletin 800E Pendant Station to a DeviceNet network by attaching thick or thin cable terminated with a mini-style DeviceNet connector to the mini-style connector on the module.

Related Publications

Title	Publication Number
DeviceNet Pendant Stations 800E User Manual	800E-UM001A-EN-P
The Time Saving Product Line - 800E Selection Guide	800E-SG001A-US-P

Ordering Information

Follow the steps below to order the Bulletin 800E Pendant Station:

1. Order the Bulletin 800E Pendant Station with this catalog number.

Description	Catalog Number
Bulletin 800E Pendant Station, 1 Illuminated Push Button	800E-PND1
Bulletin 800E Pendant Station, 1 Push Button, 1 Pilot Light	800E-PND2

2. In addition to ordering your Push Button Station, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

8520-MTBD Machine Tool Builder Panel

The Machine Tool Builder Panel provides general motion, CNC, or special application control in a pre-assembled, ready-to-use operator interface. The module can draw power directly from the DeviceNet network. The Panel uses Allen-Bradley 800A-C pushbuttons with built-in LEDs for greater operator familiarity.

DeviceNet Features and Benefits

- LEDs indicate network operation, panel operation, output faults, and adapter faults
- two-position thumbwheel switch for easy setting of Devicenet node address
- programmable lamp test

Product Features and Benefits

- selector switches for feedrate override and spindle speed override
- 39 pushbuttons with built-in LEDs
- built-in emergency stop
- auxiliary RS-232 port

DeviceNet Details

Feature	Machine Tool Builder Panel
Explicit Peer-to-Peer Messaging	Yes
I/O Peer-to-Peer Messaging	Yes
Configuration Consistency Value	No
Faulted Address Recovery	No

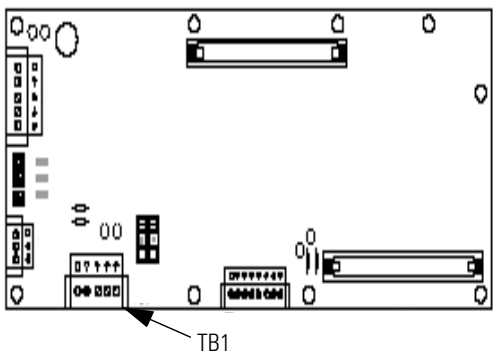
Feature	Machine Tool Builder Panel
Baud Rates Autobaud Auto Device Replacement	125Kb, 250Kb, 500Kb Yes No
Master/Scanner	No
I/O Slave Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes Yes
DeviceNet Current Draw	1.0 A maximum @ 24V dc)
I/O Data Sizes (min/max)	In: 8 bytes Out: 3 bytes

Configuration Information

Configure	By using
Baud Rates	Rotary Switches or Autobaud
Node Addresses	Two-position Thumbwheel Switches
Parameters	RSNetWorx for DeviceNet

Physical Connection

Connect the Machine Tool Builder Panel to your DeviceNet devices with by attaching thick or thin cable terminated with an open-style DeviceNet connector to TB1 on the Panel.



Related Publications

Title	Publication Number
DeviceNet-compatible MTB Panel Installation Instructions	8520-IN028A-EN-P

Ordering Information

Follow the steps below to order the Machine Tool Builder Panel:

1. Order the Machine Tool Builder Panel with this catalog number.

Description	Catalog Number
DeviceNet MTB Panel	8520-MTBD

2. In addition to ordering your MTB Panel, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

Notes:

Power and Energy Management Solutions

The Powermonitor family is Rockwell Automation's answer to power systems management. This family is a group of 16-bit microprocessor-based, digital instruments used for integrating the measured and calculated power parameters of industrial, commercial, and utility power systems. Data from the Powermonitor family of devices can be communicated over the DeviceNet network.

The Power and Energy Management Solutions group offers a full line of power monitoring products that function as power measurement devices to fit various application, network, and budget needs. Combined with Allen-Bradley Controllers, I/O, Motor Control Centers (MCC), and Drives, these products enable energy consumers to use data to take appropriate action. Power and Energy management Solutions specialty modules, designed exclusively for the power industry, provide additional capabilities and functionality.

- **Bulletin 1403 Powermonitor II** -The Allen-Bradley Powermonitor II is a self-contained, high-performance power-quality meter. Ideal for major incoming feeders and major transformers, the Powermonitor II provides monitoring and power control information. With the on-board microprocessor and advanced field-configurable communication options, you can use the Powermonitor II as a stand-alone power monitor and control device or as one element in a large energy monitoring network.

- **Bulletin 1404 Powermonitor 3000** - The Allen-Bradley Powermonitor 3000 is a power quality and sub-metering monitor used by energy consumers in critical power and energy management applications. The Powermonitor 3000 meters deploy state-of-the-art dual-port technology, helping customers leverage the high-performance newer networks without the need for serial interface bridges.

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Bulletin 1403 Powermonitor II

Bulletin 1403 Powermonitor II is a 16-bit microprocessor-based digital instrument used for integrating the measured and calculated power parameters of industrial, commercial, and utility power systems. The on-board microprocessor and an advanced field-configurable communication interface allow the unit to be used as either a stand-alone power monitor and control device, or as one element in a large energy monitoring system.The Powermonitor II features a plug-in DeviceNet communication card.

Product Features and Benefits

- power disturbance recording and tripping
- power factor displayed in three ways to reduce confusion between readings on analog and digital meters
- simultaneously displays three voltages and three current readings
- non-brominated, FDA approved plastics in display module—excellent for pharmaceutical, food processing, and control room fire safety applications
- extensive analog and digital I/O connectivity throughout the entire Rockwell Automation architecture
- large capacity non-volatile memory
- power up and power down time stamp
- 2 X 250V dc output relays standard
- connects to DeviceNet network via 1403-NDNET Communication Module

DeviceNet Details

Feature	Powermonitor
Configuration consistency Value	No
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No
I/O Slave Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes No
DeviceNet Current Draw	100 mA@24V dc

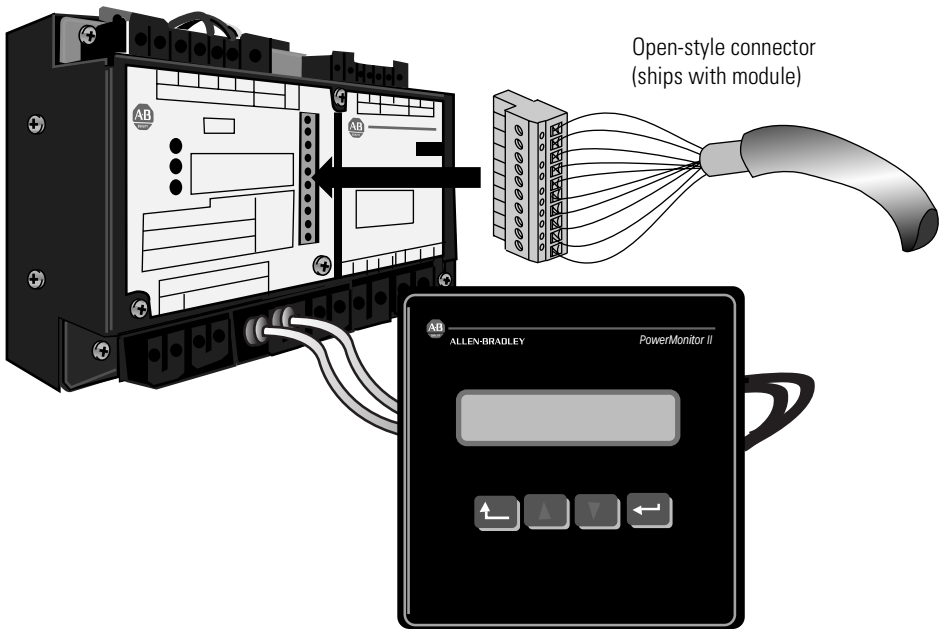
Feature	Powermonitor
I/O Data Sizes (min/max)	In: 8 bytes Out: 4 bytes

Configuration Information

Configure	By using
Baud Rates/Node Addresses	DM or DF1-RS-485s RSNetWorx for DeviceNet Node Commissioning Tool EDS files through RSNetWorx for DeviceNet
Parameters	RSPower32 Software

Physical Connection

You need the following components to connect a Powermonitor to a DeviceNet network.



Powermonitor II

30987-MC

Related Publications

Title	Publication Number
SLC 500 M0 & M1 Transfer Tables	1400-5.2.1
DeviceNet Scanner Module Installation Instructions (1747-SDN/B)	1747-5.8
DeviceNet Scanner Module Installation Instructions (1771-SDN/B)	1771-5.14

Ordering Information

Follow the steps below to order the Powermonitor Module:

1. Order the Powermonitor Module with these catalog numbers:

1403 Powermonitor II Master Module

Catalog Number	Description
1403-MM05A	Power Supply 120/240V ac 50/60 Hz or 125/250V dc, 5 A, Full Scale Current
1403-MM05B	Power Supply 24V ac 50/60 Hz or 24V/48V dc, 5 A, Full Scale Current
1403-MM01A	Power Supply 120/240V ac 50/60 Hz or 125/250V dc, 1 A, Full Scale Current
1403-MM01B	Power Supply 24V ac 50/60 Hz or 24V/48V dc, 1 A, Full Scale Current

1403 Powermonitor II Display Module

Catalog Number	Description
1403-DMA	120/240V ac 50/60 Hz or 125/250V dc
1403-DMB	24V ac 50/60 Hz or 24V/48V dc

2. In addition to ordering your Powermonitor Module, order the RSPower software package for configuration purposes.

Catalog Number	Description
9307-RSP32WENE 9307-RSP32RENE	RSPower32 Configuration Software

3. Record your selection in the bill of materials on page BOM-1.

Bulletin 1404 Powermonitor 3000

The Bulletin 1404 Powermonitor 3000 device contains a microprocessor-controlled dual-port communications option for DeviceNet. This communication option provides the Powermonitor 3000 with two active communication ports. The Master Module sets the required communications configuration parameters. One port is dedicated to DeviceNet and the other is dedicated to DF1-RS-485.

Product Features and Benefits

- four baud settings: 125Kb, 250Kb, 500Kb, and autobaud
- node capacity up to 64 nodes
- update rates for I/O channel: 100 msec minimum
- update rate for explicit messaging: 250 msec minimum
- configurable I/O channel assembly instance: 6 parameters default, 23 maximum
- configurable explicit assembly instance: 17 parameters default, 23 maximum
- forty-nine explicit assembly instances
- two I/O assembly instances
- remotely resettable through Identity Object
- support for up to 4 concurrent clients
- supports DeviceNet Heartbeat capability

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DeviceNet Details

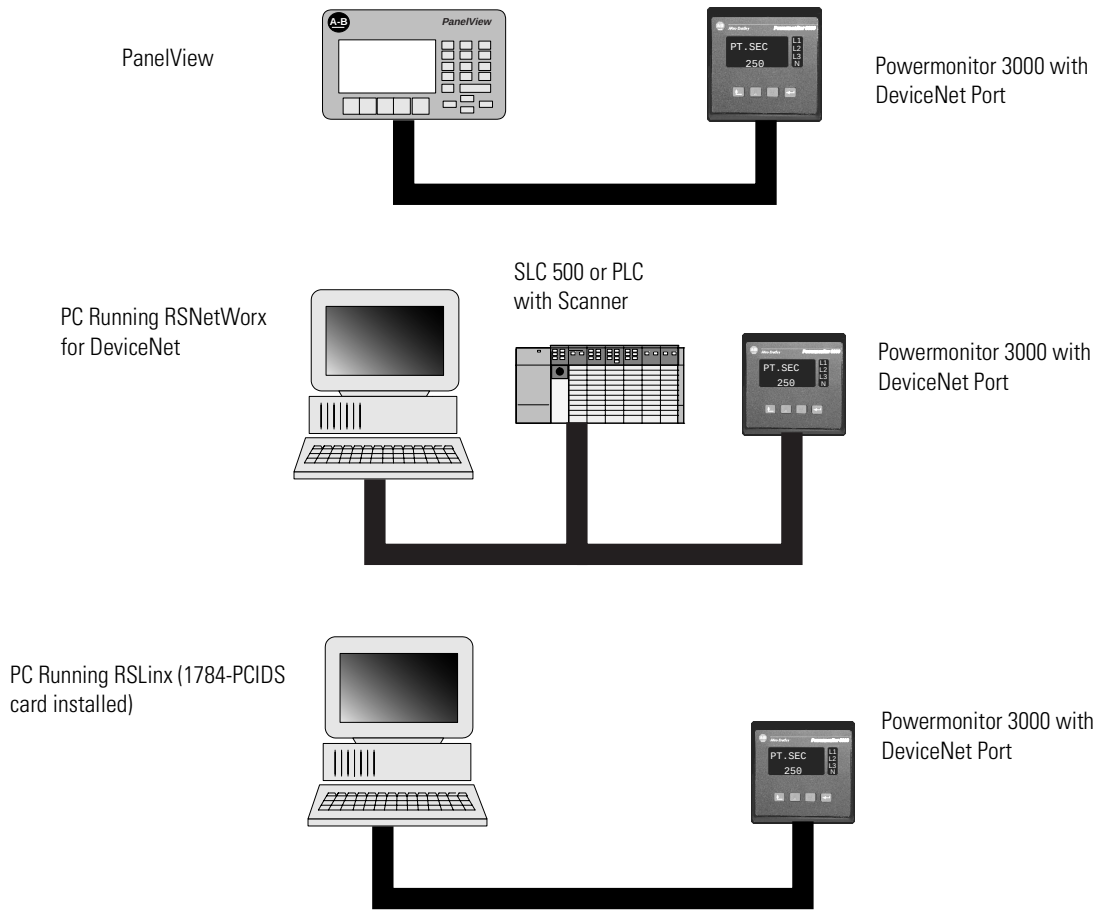
Feature	Powermonitor
Configuration Consistency Value	No
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No
I/O Slave Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes No
DeviceNet Current Draw	100 mA@24V dc
I/O Data Sizes (min/max)	In: 12 bytes Out: 4 bytes

Configuration Information

Configure	By using
Baud Rates/Node Addresses	RSNetWorx for DeviceNet
Parameters	RSPower32 Software

Physical Connection

You need the following components to connect a Powermonitor to a DeviceNet network.



Related Publications

Title	Publication Number
SLC 500M0 & M1 Transfer Tables	1400-5.2.1
Powermonitor 3000 Product Profile	1404-PP001B-US-P
DeviceNet Scanner Module Installation Instructions (1747-SDN/B)	1747-5.8
DeviceNet Scanner Module Installation Instructions (1771-SDN/B)	1771-5.14

Ordering Information

1. Order the Powermonitor Module with the appropriate catalog number. The following table shows you how to construct the catalog number to include the features you desire:

   Example catalog number:1404-M405A-DNT

Bulletin:	Type of Device:	Current Inputs:	Power Supply:	Communications Options:
1404-	**M4** - Master Module with 3-phase Metering and Pulse Input Conversion, Set-points and I/O, Data Logging **M6** - All of M4 plus Oscillography, Harmonics, sag and Swell, and Load Factor Lag	**05** - 5 Amps	**A** - 120V-24V ac 50-60Hz or 125V-250V dc **B -** 18V-50V dc	**000** - None **232** - RS-232 Serial **DNT** - DeviceNet **RIO** - Remote I/O

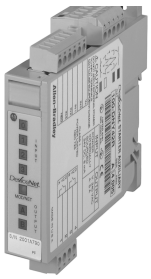
2. In addition to ordering your Powermonitor Module, order the RSPower software package for configuration purposes.

Description	Catalog Number
RSPower32 Configuration Software	9307-RSP32WENE 9307-RSP32RENE

Notes:

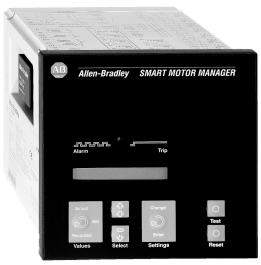
Motor Starters and Protectors

Electric motors handle more than half the workload of a network, providing the power for virtually every process involved in your application.



- **Distributed Starter™ System (DSA)** - offers a single part number solution for integrated enclosed starters, short-circuit protection, motor disconnect, input/output for sensors and actuators, and network capabilities into distributed architectures.
- **Modular DSA System (MDSA)** - simplifies DeviceNet, sensor, solenoid and starter connections—the industry's first specific purpose, gland-plate mounted inputs and outputs.
- **Bulletin 100 DeviceNet Starter Auxiliary Module (DSA™ Module**) - offers quick integration of low-level devices with minimal I/O requirements into the DeviceNet network. It is a low cost module that allows you to connect components that previously did not have communications capability, for example, circuit breakers, sensors, limit switches, pushbuttons, etc.
- **E3 Solid-State Overload Relay** - enables you to monitor motor performance and protect motors to prevent and minimize production downtime.

- **Bulletin 150 SMC Dialog Plus™** - provides soft-starting and controlled stopping for three-phased squirrel cage motors. These controllers offer sophisticated performance with advanced motor protection, networking capabilities and easy programming.
- **Bulletin 825 Smart Motor Manager** - offers programmable, electronic motor overload protection with communication capability. This enables the device to be configured for specific motor applications to provide maximum motor protection.



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- **Bulletin 2100 IntelliCENTER™ Motor Control Center** - The Allen-Bradley IntelliCENTER Motor Control provides users with an integrated hardware, software and communication solution. The IntelliCENTER features pre-configured software which shows real-time data, trending, components history, wiring diagrams, user manuals and spare parts. This motor control center reduces installation with its plug-and-play set-up and minimizes facility downtime by quickly providing intelligent diagnostic and predictive failure information.

Distributed Starter System (DSA)

DeviceNet™ CONFORMANCE TESTED

The Distributed Starter System offers a single part number solution for integrated enclosed starters, short-circuit protection, motor disconnect, input/output for sensors and actuators, and network capabilities into distributed architectures. There are two versions of the system. For applications with only a single external sensor or solenoid connection, the Distributed Starter system utilizes the DSA (Bulletin 100-DNY) for network connections. For applications with external sensors and actuators, the Distributed starter System utilizes the Modular-DSA.

Pre-engineered Distributed Starters replace traditional, centralized, custom panels, individual power wiring from starters to motors and complex hard wiring of control circuits. The Distributed Starter system allows daisy-chained power wiring to motors, control and communication over one DeviceNet cable and standardized M12 micro connectors for communication and I/O in a Type 3/4/12 and IP66 enclosure. These features significantly decrease the number of terminations, reduce installation time and wiring errors, simplify design of modular facilities, reduce plant-floor space, improve system monitoring and diagnostics, and allow system pre-commissioning.

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DeviceNet Features and Benefits

- entire device is one node
- supports polled I/O, change-of-state, cyclic, and explicit messaging
- faulted node recovery
- full parameter object support
- autobaud network rate identification
- configuration consistency value

Product Features and Benefits

- provides a method of distributing motor control in a distributed architecture
- one catalog number for pre-engineered, pre-configured, and assembled product
- small Distributed Starters fit into material handling equipment, eliminate traditional large custom panels on dedicated floor space
- reduces installation and maintenance time through the use of quick disconnect connectors such as M12 “micro” connectors for communications, inputs, and outputs

DeviceNet Details

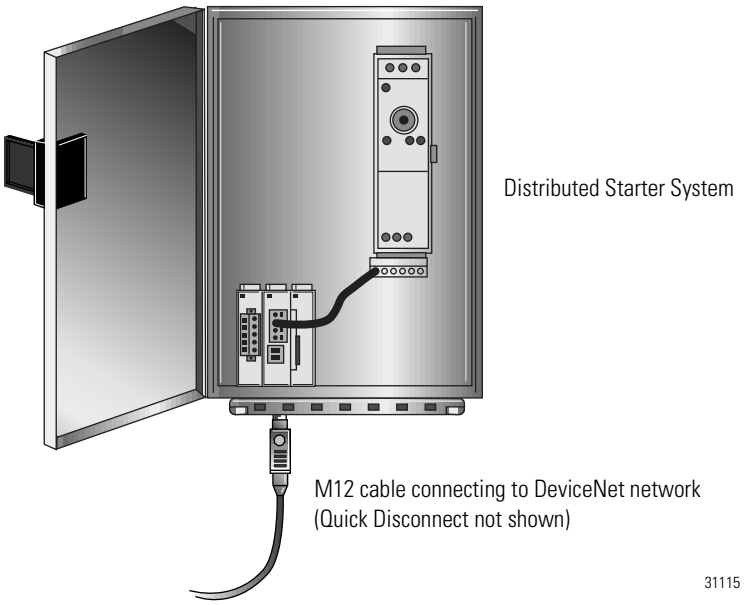
For more information, refer to the DeviceNet Starter Auxiliary Module section, page I-8, or the Modular-DSA System section, page I-5.

Configuration Information

Configure	By using
Baud Rate/Node Address	RSNetWorx for DeviceNet
Parameters	EDS files downloaded from http://www.ab.com/networks/eds

Physical Connection

You need the following components to connect the Distributed Starter system to a DeviceNet network.



Related Publications

Title	Publication Number
Cost Savings Solutions for Distributed Architectures	190D-SG002A-US-P

Ordering Information

Follow the steps below to order the Distributed Starter System:

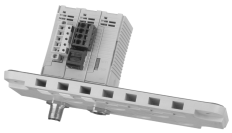
1. Refer to publication 190D-SG002A-US-P, Cost Savings for Distributed Architecture, to order your Distributed Starter System.

2. In addition to ordering your Distributed Starter System, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

Modular DSA System (MDSA)



The Modular DSA system simplifies DeviceNet, sensor, solenoid, and starter connections—the industry's first specific purpose, gland-plate mounted inputs and outputs. Gland mounting I/O reduces wiring from sensors and actuators by providing standard M12 connections at the enclosure rather than the traditional wiring to terminal blocks on a DIN-rail. Additionally, Modular-DSA I/O has broad electrical ratings, featuring 5A relay and 2A solid-state outputs, and is designed to increased temperature, shock and vibration ratings.

DeviceNet CONFORMANCE TESTED

DeviceNet Features and Benefits

- autobaud circuitry eliminates potential for incorrect baud rate
- supports polled I/O, change-of-state, cyclic, and explicit messaging
- off-line node recovery allows for commissioning of many devices at once
- configuration consistency value provides for simple verification of product configuration
- entire device is one node—supports up to 6 I/O modules on gland plate, 16 on DIN rail

Product Features and Benefits

- provides for hardware or software node address setting
- available in both 120V and 24V versions
- removable connectors ease module replacement
- many modules with DeviceNet sourced inputs for simplified distributed architecture
- high current switching capability (5A relay and 2 A solid-state)
- sensor modules provide M12 connector, power, and diagnostic information
- starter modules are combination input/output modules, allowing for simple cable connections

DeviceNet Details

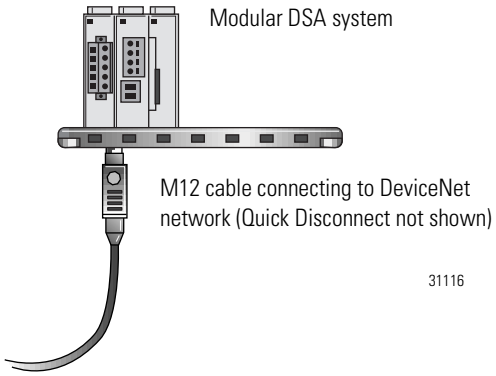
Feature	Modular DSA
Explicit Peer-to-Peer Messaging	No
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	Yes
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes No
DeviceNet Current Draw	55 mA
I/O Data Sizes (min/max)	varies depending on configuration

Configuration Information

Configure	By using
Baud Rates	Autobaud or via RSNetWorx for DeviceNet Node Commissioning Tool
Node Addresses	Rotary switches or via RSNetWorx for DeviceNet Node Commissioning Tool
Parameters	EDS files downloaded from http://www.ab.com/networks/eds

Physical Connection

You need the following components to connect the Distributed Starter system to a DeviceNet network.



Related Publications

Title	Publication Number
Modular DSA User Manual	198-UM001A-US-P
Cost Savings Solutions for Distributed Architectures	190D-SG002A-US-P

Ordering Information

Follow the steps below to order the Modular DSA System:

1. Order the Modular DSA System with these catalog numbers:

Description	Catalog Number
DeviceNet Host with M12 Connector	198-DNG
DeviceNet Host	198-DN
DC Input/Relay Out Starter Module	198-IB2XOW1
AC Combination Module	198-IA2XOW1
DC Combination Module	198-IB2XOB1
Sensor Module	198-IB2S

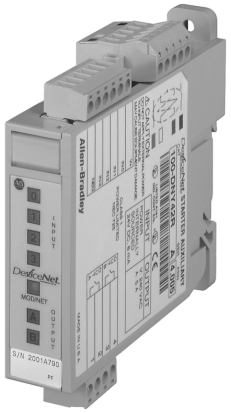
Description	Catalog Number
Gland Output Module	198-IA2
DIN DC Input Module	198-IB4
DIN DC Input Module, Sourced	198-IB45
DIN Relay Output Module	198-OW2
Gland Plate	198-G1P

2. In addition to ordering your Modular DSA System, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

Bulletin 100 DeviceNet Starter Auxiliary Module



The DeviceNet Starter Auxiliary Module (DSA™ Module) offers quick integration of low-level devices with minimal I/O requirements into the DeviceNet network. It is a low-cost module that allows you to connect components that previously did not have communications capability, for example, circuit breakers, sensors, limit switches, pushbuttons, etc.

The DeviceNet Starter Auxiliary Module can be added to new applications, or can be easily retrofitted to existing applications. With the module, starters can be linked directly to a PLC® controller via the DeviceNet network, reducing installation time and costs.

DeviceNet Features and Benefits

- inputs are powered from the network power source
- autobaud
- supports I/O poll and change-of-state messaging

Product Features and Benefits

- wire elimination for standard motor starter configuration—reduces engineering time and installation costs
- start and stop control and status indication for motor starters
- preconfigured starters with DSA module
- 24V dc or 120V ac input versions

- solid-state or relay output versions
- short circuit of inputs and outputs detected and reported over the network
- accepts contact closure inputs
- programmable on/off delay time
- network LED status indicator
- compatible with 2 wire proximity switches and 3 wire photo switches
- color coded I/O plugs
- DIN rail or panel mount capabilities
- IntelliCENTER ready

DeviceNet Details

Feature	DSA Module
Explicit Peer-to-Peer Messaging	No
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	Yes
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes No No
DeviceNet Current Draw	Maximum 150 mA
I/O Data Sizes (min/max)	In: 2 and 4 bytes Out: 1 and 2 bytes

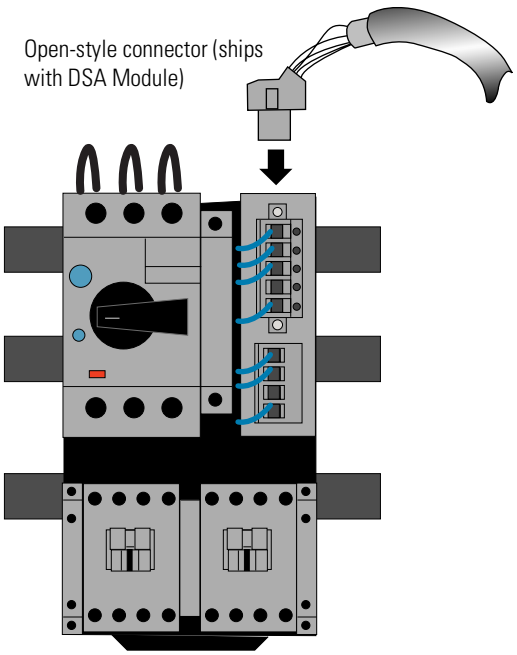
Configuration Information

Configure	By using
Baud Rates	Autobaud or via RSNetWorx for DeviceNet Node Commissioning Tool
Node Addresses	RSNetWorx for DeviceNet Node Commissioning Tool

Configure	By using
Parameters	EDS files downloaded from http://www.ab.com/networks/eds

Physical Connection

The DSA Module can be connected to a DeviceNet network in the following fashion:



Bulletin 106 IEC Combination Starter plus DSA Module 30982 -MC

Related Publications

Title	Publication Number
Bulletin 100 DeviceNet Starter Auxiliary Closing the Network Gap	0100-1.6
Allen-Bradley Bulletin 100 DeviceNet Starter Auxiliary User Manual	0100-5.3
IntelICENTER Brochure	2100-BR001A-US-P

Ordering Information

Follow the steps below to order the Starter Auxiliary Module:

1. Order the Starter Auxiliary Module with these catalog numbers:

Description	Catalog Number
120V ac, 2 Inputs, 1 Relay Output Module	100-DNY21R
24V dc, 2 Inputs, 1 Relay Output Module	100-DNY22R
24V dc, 2 Inputs, 10 Solid-state Output Module	100-DNY22S
120V ac, 4 Inputs, 2 Relay Outputs Module	100-DNY41R
24V dc, 4 Inputs, 2 Relay Outputs Module	100-DNY42R
24V dc, 4 Inputs, 2 Solid-state Output Module	100-DNX42S

2. In addition to ordering your Starter Auxiliary Module, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

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E3 Solid-State Overload Relay

DeviceNet CONFORMANCE TESTED

The E3 Solid-State Overload Relay is an optimal complete automation product offering a broad range of features in one compact package. This product allows you to effectively manage and monitor motor performance to minimize and prevent production downtime. The E3 Overload Relay is available in IEC and NEMA configurations. Two versions are available, the E3 and E3 Plus, offering flexibility in choosing the appropriate level of protection for your application.

DeviceNet Features and Benefits

- immediate access to status information, motor performance data and diagnostics
- capable of performing motor control functions to assist in maximizing production
- supports polled I/O, change-of-state, cyclic, and explicit messaging
- group 4-off-line node recovery messaging
- full parameter object support
- autobaud network rate identification
- configuration consistency value

Product Features and Benefits

- protective/warning functions: thermal overload, phase loss, ground fault (E3 Plus), stall, jam, underload, over-temperature (E3 Plus), current imbalance
- 1. . . 630A current range
- LED indicators
- test/reset button
- adjustable trip class (5 to 30)
- zero sequence ground fault 1 . . .5A range (E3 Plus)
- PTC thermistor input (E3 Plus)
- programmable trip and warning settings
- diagnostic functions
- IntelliCENTER ready

DeviceNet Details

Feature	E3	E3 Plus
Explicit Peer-to-Peer Messaging	No	No
I/O Peer-to-Peer Messaging	No	No
Configuration Consistency Value	Yes	Yes
Faulted Address Recovery	Yes	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No	No

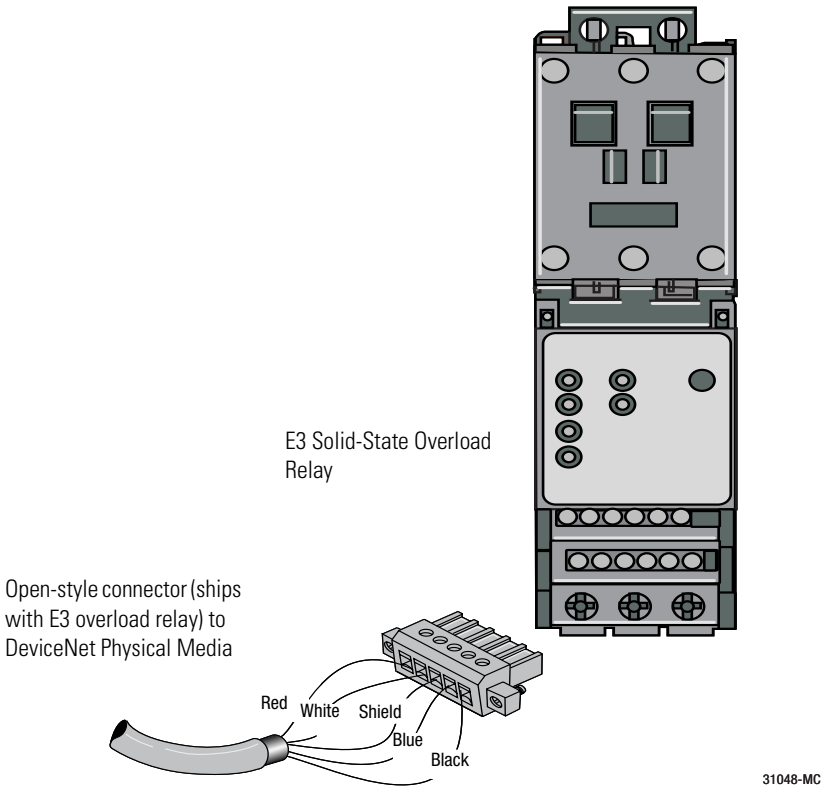
Feature	E3	E3 Plus
I/O Messaging		
Change-of-State (COS)	Yes	Yes
Polling	Yes	Yes
Cyclic	Yes	Yes
Bit Strobe	No	No
DeviceNet Current Draw	250 mA max	325 mA max
I/O Data Sizes (min/max)	In: 1 or 8 bytes Out: 1 byte	In: 1 or 8 bytes Out: 1 byte

Configuration Information

Configure	By using
Baud Rates/Node Addresses	RSNetWorx for DeviceNet Node Commissioning Tool E3 Programming and Control Terminal (catalog number 193-PCT)
Parameters	EDS files downloaded from http://www.ab.com/networks/eds

Physical Connection

You need the following components to connect the E3 Overload Relay module to a DeviceNet network.



Related Publications

Title	Publication Number
E3 Solid-State Overload Relay Product Profile	193-PP001A-US-P
E3 Solid-State Relay Selection Guide	193-SG001B-US-P
E3 and E3 Plus Overload Relays User Manual	193-UM001A-US-P
E3 Overload Relay Accessories Product Profile	193-PP008A-EN-P
Allen-Bradley Industrial Controls Catalog	A113
IntelliCENTER Brochure	2100-BR001A-US-P

Ordering Information

Follow the steps below to order the Overload Relay:

1. Order the Overload Relay with these catalog numbers:

IEC Configured E3 Solid-State Overload Relays- 2 Inputs/Outputs

Description	Adjustment Range (A)	Catalog Number
Direct Contactor Mount 100-C09...100-C23	1-5	193-EC1AB
Direct Contactor Mount 100-C09...100-C23	3-15	193-EC1BB
Direct Contactor Mount 100-C09...100-C23	5-25	193-EC1CB
Direct Contactor Mount 100-C30...100-C43	1-5	193-EC1AD
Direct Contactor Mount 100-C30...100-C43	3-15	193-EC1BD
Direct Contactor Mount 100-C30...100-C43	5-25	193-EC1CD
Direct Contactor Mount 100-C30...100-C43	9-45	193-EC1DD
Direct Contactor Mount 100-C60... 100-C65	9-45	193-EC1DE
Direct Contactor Mount 100-C60... 100-C85	18-60	193-EC1EE

IEC Configured E3 Plus Solid-State Overload Relays- 4 Inputs/2 Outputs

Description	Adjustment Range (A)	Catalog Number
Direct Contactor Mount 100-C09...100-C23	1-5	193-EC2AB
Direct Contactor Mount 100-C09...100-C23	3-15	193-EC2BB
Direct Contactor Mount 100-C09...100-C23	5-25	193-EC2CB
Direct Contactor Mount 100-C30...100-C43	1-5	193-EC2AD
Direct Contactor Mount 100-C30...100-C43	3-15	193-EC2BD
Direct Contactor Mount 100-C30...100-C43	5-25	193-EC2CD
Direct Contactor Mount 100-C30...100-C43	9-45	193-EC2DD
Direct Contactor Mount 100-C60... 100-C85	9-45	193-EC2DE
Direct Contactor Mount 100-C60... 100-C85	18-90	193-EC2EE

NEMA Configured E3 Solid-State Overload Relays- 1 Input/Output

Description	Adjustment Range (A)	Catalog Number
Direct Mount 500-TO_	1-5	592-EC1AT
Direct Mount 500-TO	3-15	592-EC1BT
Direct Mount 500-AO_, 500-BO_,500-CO_	1-5	592-EC1AC
Direct Mount 500-AO_,500-BO_,500-CO_	3-15	592-EC1BC
Direct Mount 500-AO_,500-BO_,500-CO_	5-25	592-EC1CC
Direct Mount 500-AO_,500-BO_,500-CO_	9-45	592-EC1DC
Direct Mount 500-DO_	9-45	592-EC1DD
Direct Mount 500-DO_	18-90	592-EC1ED

NEMA Configured E3 Plus Solid-State Overload Relays- 4 Inputs/2 Outputs

Description	Adjustment Range (A)	Catalog Number
Direct Mount 500-TO_	1-5	592-EC2AT
Direct Mount 500-TO	3-15	592-EC2BT
Direct Mount 500-AO_, 500-BO_,500-CO_	1-5	592-EC2AC
Direct Mount 500-AO_,500-BO_,500-CO_	3-15	592-EC2BC
Direct Mount 500-AO_,500-BO_,500-CO_	5-25	592-EC2CC
Direct Mount 500-AO_,500-BO_,500-CO_	9-45	592-EC2DC
Direct Mount 500-DO_	9-45	592-EC2DD
Direct Mount 500-DO_	18-90	592-EC2ED

2. In addition to ordering your Overload Relays, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

Bulletin 150 SMC Dialog Plus™

SMC Dialog Plus controllers provide intelligent microprocessor control of motors rated from 1/3 through 1000 horsepower. Solid state design provides reliability in a compact package with fewer parts than electromechanical devices. Also, they offer highly advanced motor protection with features such as dynamic phase rebalance, flexible communication, and easy programming.

The SMC Dialog Plus controller provides the following modes of operation: soft start with selectable kickstart, current limit start, dual ramp start, full voltage start, soft stop, pump control, smart motor braking, Accu-Stop, preset slow speed, and slow speed with braking. DeviceNet connectivity is provided through the 1203-GK5, 1203-GU6, or 1203-GM61 Modules.

DeviceNet Features and Benefits (based on 1203-GU6 Module)

- supports change-of-state, polling, and strobe messaging for efficient communication
- supports autobaud functionality (via 1203-GU6 only)
- provides advanced overload protection
- can reset starter over the network
- reports motor application data, including phase current, phase voltage, phase imbalance information, kilowatt hours, elapsed time, and starter per hour
- reports overload relay information, including output status, trip status, trip cause, trip history, and thermal capacity utilized

Product Features and Benefits

- motor protection
- metering
- SCANport communication
- LCD display
- keypad programming
- three programmable auxiliary contacts
- SMB™ Smart Motor braking used with applications that require the motor to stop faster than a coast to rest
- Accu-Stop™ position control

DeviceNet Details

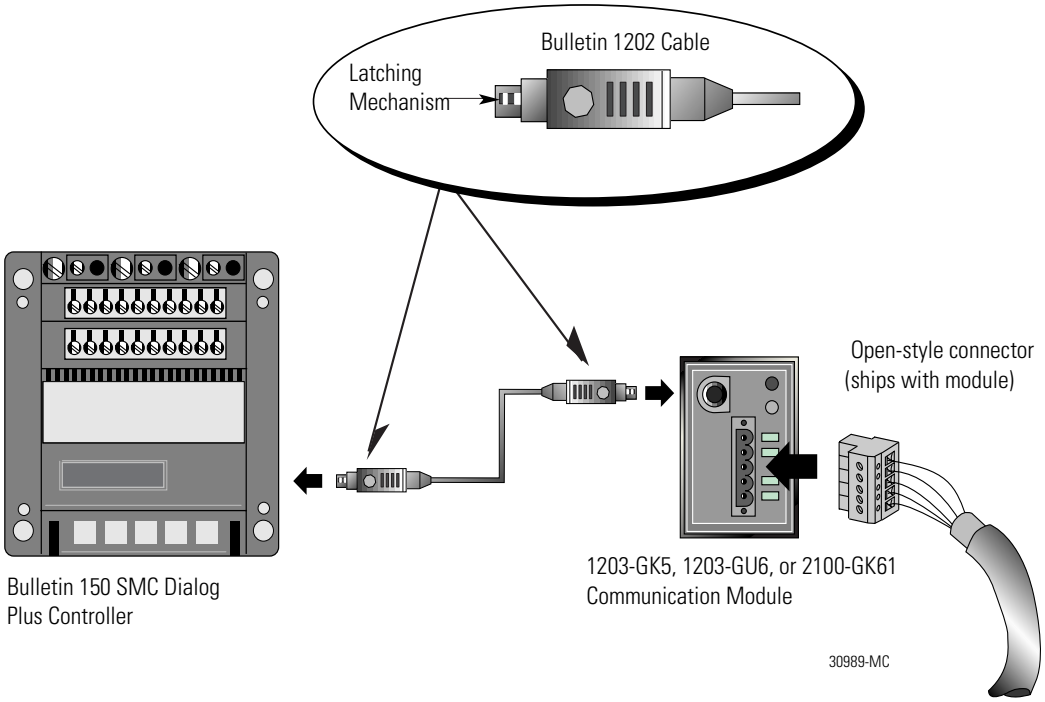
Feature	1203-GU6 Version	1203-GK5 Version	2100-GK61 Version
Explicit Peer-to-Peer Messaging	Yes	No	No
I/O Peer-to-Peer Messaging	Yes	No	Yes
Configuration Consistency Value	No	No	No
Faulted Address Recovery	No	No	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes	125Kb, 250Kb, 500Kb No	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No	No	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 No Yes No No	 No Yes No No	 Yes Yes Yes Yes
DeviceNet Current Draw	60 mA	110 mA (specification) 140 mA (marked on device)	120 mA
I/O Data Sizes (min/max)	In: 4-20 bytes Out: 4-20 bytes	In: 16 bytes Out: 16 bytes	In: 4-20 bytes Out: 4-20 bytes

Configuration Information

Configure	By using
Baud Rates/Node Addresses	DIP Switches RSNetWorx for DeviceNet Node Commissioning Tool
Parameters	**1203-GK5:** Hardware Switches, Electronic Data Sheets stored in the Device or www.ab.com/networks/eds **1203-GU6 and 2100-GK61:** *Software (RSNetWorx):* Application in RSNetWorx (e.g. FLEX I/O, PCD, KFD) *RS-232 on board:* Custom Application

Physical Connection

You need the following components to connect the SMC Dialog Plus to a DeviceNet network.



Related Publications

Title	Publication Number
Allen-Bradley Industrial Controls Catalog	A113
Smart Choices for Motor Management Selection Guide	150-SG001A-US-P
DeviceNet to SCANPort Communication Module with Digital Inputs-Catalog Number:2100-GK61	2100-UM001A-US-P
DeviceNet Communication Module User Manual	1203-5.3
IntelliCENTER Brochure	2100-BR001A-US-P
SMC Dialog Plus Controller--Getting Started	150-UM002A-US-P

Ordering Information

Open and Non-Combination Controllers

Catalog numbers are built by selecting the appropriate features and options.

1. Order Open and Non-Combination Controllers with the appropriate catalog number. The following table shows you how to construct the catalog number to include the features you desire:

Example catalog number: **150-B180NBDA-8L**

There are three types of open or non-combination SMC Dialog Plus controllers:

- Bulletin 150 - Solid-state controller
- Bulletin 150B - Solid-state controller and isolation contactor
- Bulletin 150R - Solid-state controller with Reversing contactor

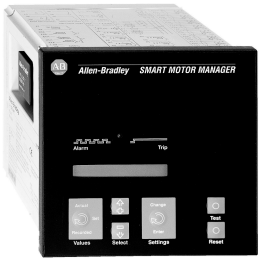
Bulletin-	Controller Ratings	Enclosure Type	Input Line Voltage	Control Voltage	Options- (Select One)	Options
150 **150B** **150R**	**B24** - 24 A, 1...15 HP @ 480V ac **B35** - 35 A, 1...25 HP @ 480V ac **B54** - 54 A, 1...40 HP @ 480V ac **B97** - 97 A, 5...75 HP @ 480V ac **B135** - 135 A, 5...100 HP @ 480V ac **B180** - 180 A, 5...150 HP @ 480V ac **B240** - 240 A, 5...200 HP @ 480V ac **B360** - 360 A, 5...300 HP @ 480V ac **B500** - 500 A, 4...400 HP @ 480V ac **B650** - 650 A, 5...500 HP @ 480V ac **B720** - 720 A, 5...600 HP @ 480V ac **B850** - 850 A, 10...700 HP @ 480 V ac **B1000** - 1000 A, 10...800 HP @ 480 V ac	**N** - Open **A** - NEMA Type 1 **J** - NEMA Type 12 **F** - NEMA Type 4 **H** - NEMA Type 3R **S** - NEMA Type 4x	**Open Type:** **B** - 200...480 V ac, 3-phase, 50 and 60 Hz **C** - 200...600V ac, 3-phase, 50 and 60 Hz **Non-Combination Enclosed Only:** **H** - 200...208V ac, 3-phase, 50 and 60 Hz **A** - 230V ac, 3-phase, 50 and 60 Hz **B** - 200...480V ac, 3-phase, 50 and 60 Hz **C** - 200...600V ac, 3-phase, 50 and 60 Hz	**D** - 100...240V ac **R** - 24V ac/dc	**A** - Soft Stop **B** - Pump Control **C** - Preset Slow Speed **D** - SMB Smart Motor Breaking **E** - Accu-Stop **F** - Slow Speed with Braking	**8L** - Line-mounted Protective Module **8M** - Load-mounted Protective Module **8B** - Line- and Load-mounted Protective Module

2. In addition to ordering your Open and Non-Combination Controllers, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

Bulletin 825 Smart Motor Manager



The Smart Motor Manager is a programmable, electronic motor overload protection relay with communication capability. This allows the device to be configured for specific motor applications to provide maximum motor protection. This protection is achieved by utilizing the microprocessor of the Smart Motor Manager to model the thermal conditions of the motor and to configure and monitor the desired protective features of the device. The module provides electronic current and temperature sensing protection functions for motors rated 0.5-2000A, 200-7200V ac. The Smart Motor Manager can connect directly to a DeviceNet network through an optional communication interface card (catalog number 825-MDN).

DeviceNet Features and Benefits

- detects thermal overload, phase loss, jam, ground fault, short circuit, underload readable over DeviceNet
- monitors critical motor operational data across network
- controls the motor starting contactor across the network using auxiliary contacts available with the Smart Motor Manager's MST option card

Product Features and Benefits

- control features: emergency start, warm starting, two-speed, wye-delta starting
- limited starts per hour
- LCD fault diagnostics
- motor temperature monitoring can be accomplished with the MST option card (1-PTC input) or the MMV option card (6-100 ohm platinum RTD inputs)
- in-depth diagnostics, statistical and historical data simplify troubleshooting and minimize downtime
- pre-alert capabilities provide early detection and notification of an impending failure
- programming is easily accomplished through the built-in keypad and LCD, or from RSNetWorx for DeviceNet software

DeviceNet Details

Feature	Bulletin 825
Explicit Peer-to-Peer Messaging	No
I/O Peer-to-Peer Messaging	No

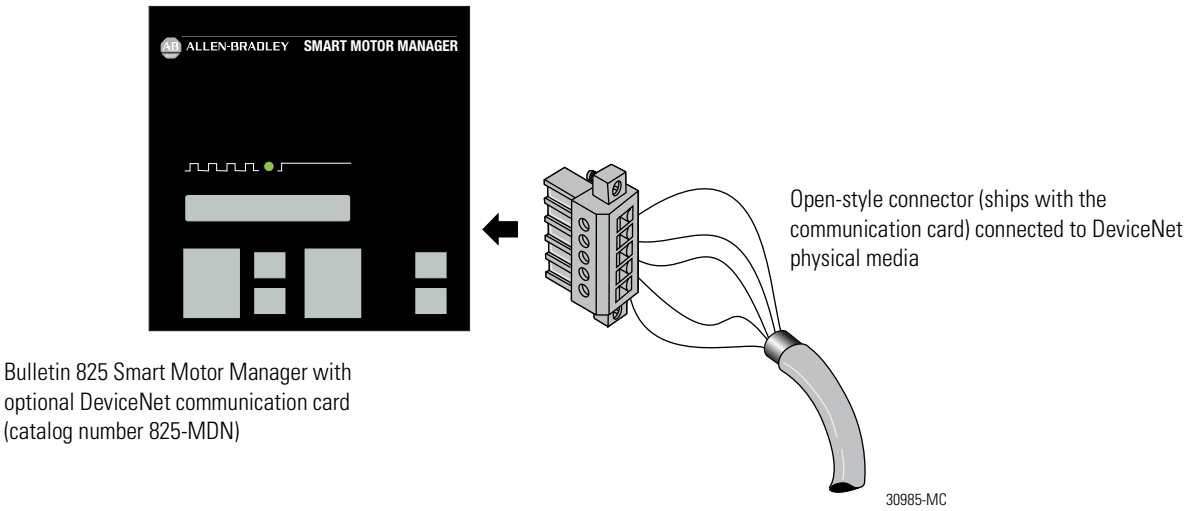
Feature	Bulletin 825
Configuration Consistency Value	No
Faulted Address Recovery	No
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 No Yes No No
DeviceNet Current Draw	70 mA max.
I/O Data Sizes	In: 1,4,5 or 8 bytes Out: 1 byte

Configuration Information

Configure	By using
Baud Rates/Node Addresses	RSNetWorx for DeviceNet
Parameters	EDS files downloaded from http://www.ab.com/networks/eds

Physical Connection

You need the following components to connect the Bulletin 825 to a DeviceNet network.



Related Publications

Title	Publication Number
Allen-Bradley Industrial Controls Catalog	A113
Bulletin 825 Smart Motor Manager Brochure	825-BR001B-EN-P
Bulletin 825 Smart Motor Manager User Manual	825-UM001A-EN-P

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Ordering Information

Follow the steps below to order the Bulletin 825:

1. Order the Bulletin 825 with these catalog numbers:

Smart Motor Manager

Supply Voltage	Catalog Number
24V ac	825-MKD
120-220V ac	825-MD
220-240V ac	825-MAJ
380-415V ac	825-MN
440V ac	825-MGB
24-48V dc	825-MZ48

Converter Module

Current Range (A)	Catalog Number
0.5 . . . 2.5	825-MCM2
2.5 . . .20	825-MCM20
20 . . . 180	825-MCM180
160. . . 630[1]	825-MCM630
160... 630	825-MCM630N

[1] UL/CSA: 160... 434A

Optional Cards

Description	Catalog Number
MST Option	825-MST
MLV Option	825-MLV
MMV Option	825-MMV
DeviceNet Communication Card	825-MDN

2. In addition to ordering your Smart Motor Manager, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

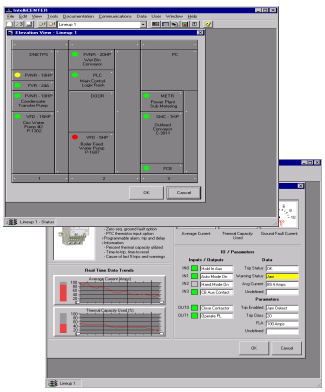
3. Record your selection in the bill of materials on page BOM-1.

Bulletin 2100 IntelliCENTER Motor Control Center

The Allen-Bradley IntelliCENTER Motor Control Center provides MCC users with an integrated hardware, software and communication solution. The IntelliCENTER features pre-configured software which shows real-time data, trending, component history, wiring diagrams, user manuals and spare parts. The IntelliCENTER reduces installation time with its plug-and-play set-up and minimizes facility downtime by quickly providing intelligent diagnostic and predictive failure information.

IntelliCENTER Software

The Allen-Bradley IntelliCENTER software provides the ultimate window into an MCC. The software puts both real-time diagnostics and MCC documentation at the user's fingertips to maximize MCC and related equipment performance. The IntelliCENTER software replicates the actual MCC lineup on a PC screen complete with nameplates and pilot lights on each door to show status (on, off, warning, tripped, communication failure) so users can identify problems. Graphical views of individual MCC units display device data for motor controllers, drives and motor protectors, allowing users to quickly view critical ampere, time-to-trip, trip cause, ground fault ampere, and I/O status. Each screen is pre-configured to show the parameters that are typically of greatest interest, and users can easily customize parameters. Most screens feature trending graphs and analog dials. The software also provides spare parts information, AutoCAD documentation, user manuals and event logging.



DeviceNet Features and Benefits

- **Built-in DeviceNet**: Six DeviceNet ports are provided in the rear of each vertical wireway, simplifying installation, relocation and addition of MCC units. Users simply plug in the units and then plug in the DeviceNet cable. Trunk and drop lines are routed behind barriers, rather than within the MCC wireways. This isolates the primary DeviceNet cables from mechanical damage. The cable is rated 8 amperes, 600 volts, Class 1, allowing the routing of DeviceNet cabling next to power wiring and minimizing the need for multiple power supplies.

- **Flexible Viewing Location** - Users may choose to locate the IntelliCENTER software in a control room, at an engineer's desk or on a laptop used by maintenance personnel. By incorporating RSLinx, the Rockwell Software communication driver package, users can run IntelliCENTER software anywhere on EtherNet/IP, ControlNet and DeviceNet networks.
- **Plug-and-Play:** The IntelliCENTER is fully tested in an ISO9001 registered facility prior to shipment, providing users with a true plug-and-play solution.

Product Features and Benefits

IntelliCENTER incorporates several new Allen-Bradley products.

E3 Solid-State Overload Relay

- Built-in DeviceNet
- 2 or 4 input points
- Programmable protective functions
  - Overload/Underload
  - Phase loss/imbalance
  - Zero sequence ground fault (Plus version)
  - PTC thermistor input (Plus version)
  - Stall
  - Jam
- Information
  - Time-to-trip, time-to-reset
  - Percent thermal capacity utilized
  - History of last five trips

Communication Module with Input Points (2100-GK61)

- Interface module for intelligent Allen-Bradley products
- Features 4 input points ideal for monitoring disconnect switch, hand-off-auto switch or contactor status

DeviceNet Starter Auxiliary (DSA)

- Interface module for non-intelligent devices
  - Motor starter with eutectic alloy, SMP-1 or SMP-2 motor protection
  - Feeders and mains
- 4 input points ideal for monitoring contactor status, disconnect switch, overload trip and hand-off-auto
- 2 output points for direct control of motor starter coil up to NEMA size 5

Related Publications

Title	Publication Number
IntelliCENTER Brochure	2100-BR001A-US-P
Factory Configured DeviceNet MCCs DeviceNet System Design Guide	2100-TD004B-EN-P
2100-GK61 DeviceNet Communications Module with Inputs-Product Data	2100-TD006A-US-P
Integrated, Intelligent Motor Control Centers White Paper	2100-WP001A-EN-P
DeviceNet CENTERLINE Motor Control Centers Specification Guide	2100-TD005B-EN-P
DeviceNet Hardware in Motor Control Centers	2100-TD019A-EN-P

Ordering Information

IntelliCENTER Motor Control Centers can be custom designed to connect many devices to DeviceNet. If you are interested in ordering IntelliCENTER Motor Control Centers, please contact your local Rockwell Automation sales office directly. Do not use the bill of materials at the end of this publication.

Notes:

Drives

Allen-Bradley drives are a full family of adjustable speed drives that can connect to DeviceNet. These drives feature the ability to be configured locally via a Human Interface Module (HIM), or over the network at any point—during start-up or runtime. You can read diagnostics (current draw, phase, output, voltage, etc.) from a PC or operator interface. Data from the drives can be used for monitoring, trending, and analysis to fine-tune your processes.

Whether you are filling bottles or assembling commercial washing machines, precise control of products and parts is essential. From simple conveyors to complex, factory-wide material handling systems, Allen-Bradley drives help you choose the combination of starting, stopping, speed and torque control you need.

- **Bulletin 160 Smart Speed Controller** - simplicity, flexibility and ease of use are the foundation for this drive. Bulletin 160 comes in two control models, Analog Signal Follower, and Preset Speed.

- **1305 AC Drives** - variable speed drives designed to control the speed of three-phase ac induction motors in a variety of demanding applications when flexibility, performance, and ease of use are essential.
- **1336 PLUS II AC Drives** - uses the latest in Insulated Gate Bipolar Transistor (IGBT) power technology. These drives are programmed with sophisticated control algorithms to provide smooth performance, exceptional torque at any speed and quiet, efficient operation.

- **1336 IMPACT™ AC Drives** - designed for simple set-up and operation, but still provide the features of more complicated drives. These drives use Force Technology™ for more demanding speed and torque control.
- **1336 FORCE™ AC Drives** - redefines the traditional ac drive by combining high performance motor control, digital communications capabilities, and advanced power structure design in a single product.

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- **1397 Digital DC Drives** - designed for easy integration into automation systems. Drive communication is accomplished through SCANport™, a highly flexible communication link.
- **1557 Medium Voltage Drive** - uses CSI-PWM technology and direct vector control to provide near sinusoidal motor waveform for use with new and retrofit standard ac motors.
- **1329I Integrated Drive/Motor** - combines a flexible Pulse Width Modulated (PWM) drive with a rugged ac induction motor for tough industrial applications.

- **PowerFlex™ 70 AC Drives** - offers a compact package of power, control and an operator interface designed to meet demands for space, simplicity and reliability. The Drives provide a broad spectrum of features for easy configuration to meet most application needs.

Bulletin 160 Smart Speed Controller (SSC™)

When the Bulletin 160 SSC was first introduced in the market, its innovative design helped set the standard for future microdrives. With expanded power ratings (through 5 HP, 4Kw), increased functionality and an enhanced hardware design, the Bulletin 160 is a step above comparable ac drives in the marketplace.

The DeviceNet Communication Module is a low cost solution for controlling and monitoring the drive. This module attaches directly to the front of the drive, adding less then one inch (25mm) to the overall depth. This reduces installation time and saves valuable panel space.

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DeviceNet Features and Benefits

- EDS files are self-generated (using RSNetWorx software), helping to simplify DeviceNet connectivity
- node address and baud rate can be set via DIP switches
- DIP switch factory defaults allow node address and baud rate to be configured via the network (defaults are node address 63 and baud rate 125Kb)
- offers flexibility for interfacing with various Rockwell Automation products

Product Features and Benefits

- feed through 6-pole power terminals to simplify power wiring and grounding practices, which is excellent for constant speed retrofits
- hinged terminal guards allow easy access to power terminals
- program keypad module provides local control and offers access to all program display parameters
- DIN-rail or panel attachable; permits quick, low cost installation
- programmable output—N.O./N.C. contact
- programmable terminal block provides flexibility in meeting a variety of applications without requiring additional external control logic

DeviceNet Details

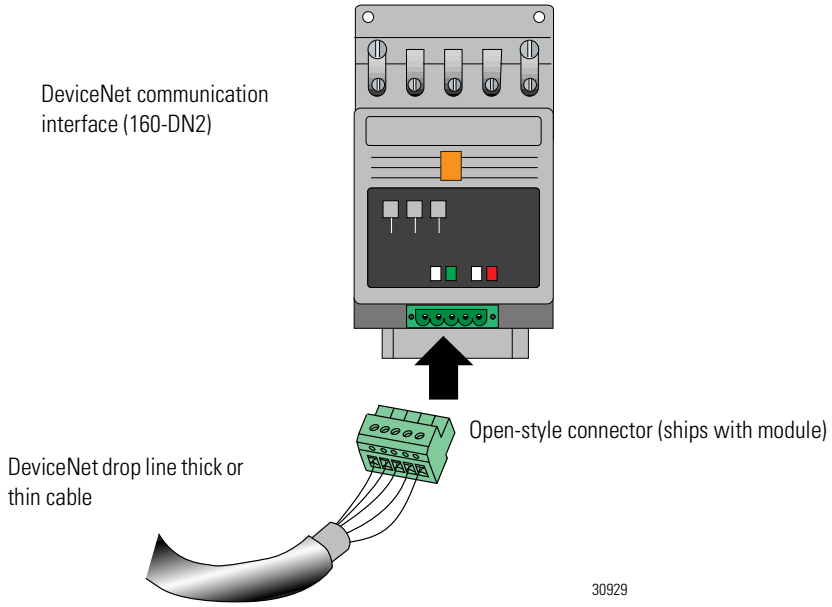
Feature	Bulletin 160 SSC
Explicit Peer-to-Peer Messaging	No
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	Yes
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb No
Master/Scanner	No
I/O Slave Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes No
DeviceNet Current Draw	40 mA
I/O Data Sizes (min/max)	In: 1, 4 or 8 bytes Out: 1, 3 or 4 bytes

Configuration Information

Configure	By using
Node Address/Baud Rates	DIP Switches or RSNetWorx for DeviceNet Node Commissioning Tool
Parameters	EDS sheets via RSNetWorx for DeviceNet

Physical Connection

You need the following components to connect a Bulletin 160 SSC interface to a DeviceNet network.



Related Publications

Title	Publication Number
Bulletin 160 "Series C" Smart Speed Controllers Brochure	0160-BR001B-EN-P
SSC Smart Speed Controllers User Manual	0160-5.9
SSC Smart Speed Controllers Quick Reference	0160-5.8
DeviceNet Communication Module User Manual	0160-5.18

Ordering Information

Follow the steps below to order the Drive:

1. Order the Bulletin 160 Smart Speed Control Drive with these catalog numbers:

Description	Analog Signal Follower Model	Preset Speed Model	Output Current Rating
200-240V 50/60 Hz Single-Phase (Open Style)	160S-AA02NSF1	160S-AA02NPS1	2.3A
	160S-AA03NSF1	160S-AA03NPS1	3.0 A
	160S-AA04NSF1	160S-AA04NPS1	4.5 A
	160S-AA08NSF1	160S-AA08NPS1	8.0 A
200-240V 50/60 Hz Three-Phase (Open Style)	160-AA02NSF1	160-AA02NPS1	2.3 A
	160-AA03NSF1	160-AA03NPS1	3.0 A
	160-AA04NSF1	160-AA04NPS1	4.5 A
	160-AA08NSF1	160-AA08NPS1	8.0 A
	160-AA12NSF1	160-AA12NPS1	12.0 A
	160-AA18NSF1	160-AA18NPS1	18.0 A
380-460V 50/60 Hz Three-Phase (Open Style)	160-BA01NSF1	160-BA01NPS1	1.2 A
	160-BA02NSF1	160-BA02NPS1	1.7 A
	160-BA03NSF1	160-BA03NPS1	2.3 A
	160-BA04NSF1	160-BA04NPS1	4.0 A
	160-BA06NSF1	160-BA06NPS1	6.0 A
	160-BA10NSF1	160-BA10NPS1	10.5 A
200-240V 50/60 Hz Single-Phase (Chassis Mount)	160S-AA02PSF1	160S-AA02PPS1	2.3 A
	160S-AA03PSF1	160S-AA03PPS1	3.0 A
	160S-AA04PSF1	160S-AA04PPS1	4.5 A
	160S-AA08PSF1	160S-AA08PPS1	8.0 A
200-240V 50/60 Hz Three-Phase (Chassis Mount)	160-AA02PSF1	160-AA02PPS1	2.3 A
	160-AA03PSF1	160-AA03PPS1	3.0 A
	160-AA04PSF1	160-AA04PPS1	4.5 A
	160-AA08PSF1	160-AA08PPS1	8.0 A
	160-AA12PSF1	160-AA12PPS1	12.0 A
	160-AA18PSF1	160-AA18PPS1	18.0 A

Description	Analog Signal Follower Model	Preset Speed Model	Output Current Rating
380-460V 50/60 Hz Three-Phase (Chassis Mount)	160-BA01PSF1	160-BA01PPS1	1.2 A
	160-BA02PSF1	160-BA02PPS1	1.7 A
	160-BA03PSF1	160-BA03PPS1	2.3 A
	160-BA04PSF1	160-BA04PPS1	4.0 A
	160-BA06PSF1	160-BA06PPS1	6.0 A
	160-BA10PSF1	160-BA10PPS1	10.5 A

2. In addition to ordering your Drive, order the DeviceNet Communication Module.

Description	Catalog Number
DeviceNet Communication Module	160-DN23

3. Order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

4. Record your selection in the bill of materials on page BOM-1.

TIP

Additional options are available in custom and configured drive packages. Contact your local Rockwell Automation office for availability.

Bulletin 1305 AC Drives

The Bulletin 1305 ac Drive is a variable speed drive designed to control the speed of three-phase ac induction motors in a variety of demanding applications. Application performance requirements are often met "out of the box" without parameter adjustments. Needed adjustments can be made using the Human Interface Module (HIM). The 1305 AC drive has a wide range of parameters which can be set to meet the requirements of many diverse applications. The standard SCANport communications link permits a simple connection to DeviceNet.

Bulletin 1305 Drives use IGBT (insulated gate bi-polar transistor) technology to provide faster switching of the output transistors compared to the conventional bi-polar transistors. The carrier frequency is adjustable in 100 Hz increments to help minimize audible noise and reduce mechanical resonance.

Product Features and Benefits

- 0.37-4.0kW (0.5-5hp), 200-460V ac
- microprocessor-controlled, adjustable frequency drive
- hybrid current limit, inherent dynamic braking, and built-in protective functions

DeviceNet Details (based on 1203-GU6 module)

Feature	Bulletin 1305 Drive
Explicit Peer-to-Peer Messaging	Yes
I/O Peer-to-Peer Messaging	Yes
Configuration Consistency Value	Yes
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes No
DeviceNet Current Draw	60 mA
I/O Data Sizes (min/max)	In: 4,8,12,16 or 20 bytes Out: 4,8,12,16 or 20 bytes

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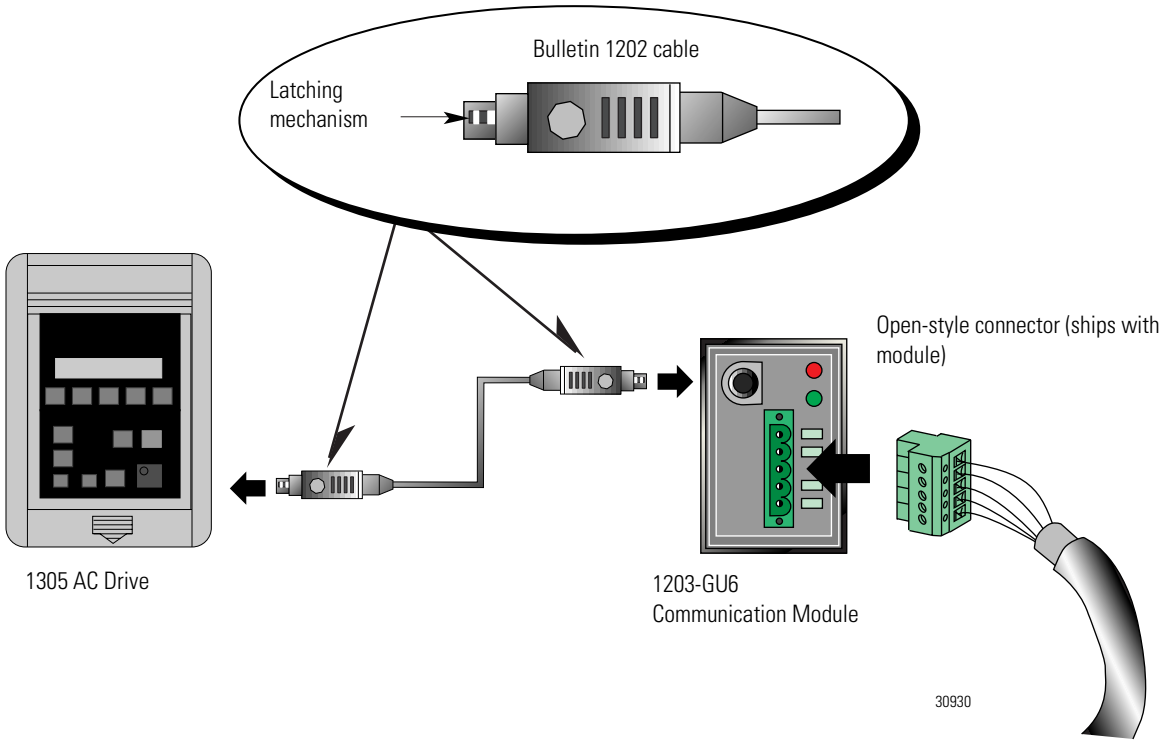
Configuration Information

Configure	By using
Baud Rates/Node Addresses	RSNetWorx for DeviceNet Node Commissioning Tool or serial communication software
Parameters	EDS files downloaded from http://www.ab.com/networks/eds

Physical Connection

You need the following components to connect a Bulletin 1305 Drive to a DeviceNet network.



Related Publications

Title	Publication Number
Bulletin 1305 AC Drive Brochure	1305-BR001A-EN-P
DeviceNet Communication Module Installation Instructions	1203-5.12

Ordering Information

Follow the steps below to order the Drive:

1. Order the Bulletin 1305 AC Drive with these catalog numbers:

Voltage Rating	Horsepower	Output Current Rating	Catalog Number
200-230V 50/60 Hz	0.5	2.3A	1305-AA02A [1, 2]
	0.75	3.0A	1305-AA03A[1, 2]
	1	4.5A	1305-AA04A[1, 2]
	2	8.0A	1305-AA08A[1, 2]
	3	12.0A	1305-AA12A[1, 2]
380-460V 50/60Hz	0.5	1.3	1305-BA01A[1, 2]
	0.75	1.6	1305-BA02A[1, 2]
	1	2.3	1305-BA03A[1, 2]
	2	4.0	1305-BA04A[1, 2]
	3	6.0	1305-BA06A[1, 2]
	5	9.0	1305-BA09A[1, 2]

[1] These 1305 drives include English text display. A second language text display may be added. Consult your Rockwell Automation dealer for more information.

[2] To order a drive with a HIM installed, use one of the following suffixes: Analog Speed Potentiometer (-HA1), Digital Up-Down Speed Controller (-HA2), Programmer Only (-HAP).

2. When ordering a Bulletin 1305 Drive, also include either a DeviceNet 24Vdc Communication Module or the Enhanced DeviceNet 24Vdc Communication Module.

Description	Catalog Number
DeviceNet 24V dc Communication Module	1203-GK5
Enhanced DeviceNet 24V dc Communication Module	1203-GU6

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3. In addition to ordering your Drive, order RSNetWorx for DeviceNet and the DriveExplorer™ Software for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3
DriveExplorer™ Software	9306-4EXP01ENE

4. Record your selection in the bill of materials on page BOM-1.

TIP

Additional options are available in custom and configured drive packages. Contact your local Rockwell Automation office for availability.

1336 PLUS II Adjustable Frequency AC Drive

The 1336 PLUS II Drive offers remarkably easy setup and operations, complete flexibility and outstanding performance, whether your application requires simple speed control or the torque performance of a powerful flux vector drive. This drive uses IGBT (insulated gate bipolar transistor) power technology and sophisticated control algorithms to provide smooth performance, exceptional torque at any speed and quiet, efficient operation. The 1336 PLUS II Drive includes sensorless vector control, which is excellent for specialized applications with:

- cyclic loads
- high inertia
- rapid acceleration
- high shock loading
- high running torque requirements
- increased braking
- high breakaway torque needs
- fast dynamic response.

Product Features and Benefits

- detection and trip protection for these conditions: under/overvoltage, drive overcurrent, overtemperture, external signal, drive output short, ground fault, encoder loss, load loss, and single phase
- real-time preventative maintenance coupled with customized status and fault reporting
- removable Human Interface Module (HIM)

- thermal dissipation management
- dynamic current control

DeviceNet Details (based on the 1203-GU6 module)

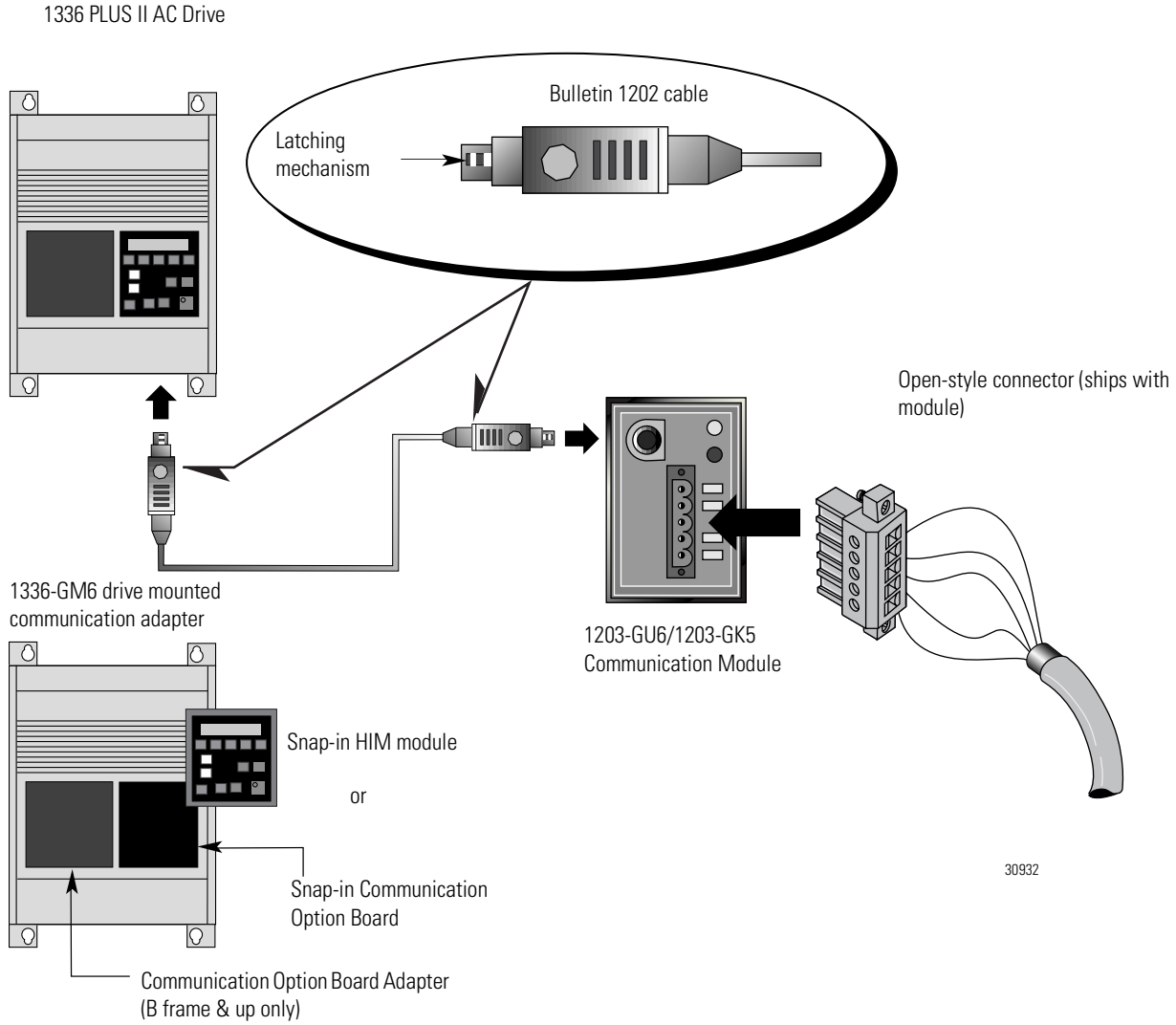
Feature	1336 PLUS II Drive
Explicit Peer-to-Peer Messaging	Yes
I/O Peer-to-Peer Messaging	Yes
Configuration Consistency Value	Yes
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes No
DeviceNet Current Draw	60 mA
I/O Data Sizes (min/max)	In: 4,8,12,16 or 20 bytes Out: 4,8,12,16 or 20 bytes

Configuration Information

Configure	By using
Baud Rates/Node Address	RSNetWorx for DeviceNet Node Commissioning Tool or serial communication software
Parameters	EDS files downloaded from http://www.ab.com/networks/eds

Physical Connection

You need the following components to connect a 1336 PLUS II AC Drive to a DeviceNet network.



Related Publications

Title	Publication Number
Redefining Simplicity, Flexibility and Performance in an AC Drive Brochure	1336F-BR001B-EN-P
DeviceNet Communication Module	1203-5.12

Ordering Information

1. Order the Drive with the appropriate catalog number. The table on the next page shows you how to construct the catalog number to include the features you desire:

Example catalog number:1336F-AQF05AAENHASB

Bulletin:	Voltage:	Nominal HP Rating: kW (HP)	Enclosure Type:	Language Group:	Options:
1336F-	**AQ** - 200-240V ac or 310V DC **BR** - 380-480V ac or 513-620V DC **CW** - 500-600V ac or 775V DC		**AA** - IP 20 (NEMA 1) **AE** - IP 20 (NEMA 1)/EMC 0.37-45 kW (0.5-60 HP) only **AF** - IP 65 (NEMA 4) **AJ** - IP 54 (NEMA 12) **AN** - IP 00 (Open)	**EN** - English **FR** - French **DE** - German **IT** - Italian **ES** - Spanish **JP** - Japanese	**Human Interface Module, Snap-In, IP20 (NEMA Type 1)** **HASB** - Snap-In Cradle/Blank Plate **HASP** - Programmer Only **HCSP** - Programmer Only & Upload/Download Capability **HAS1** - Programmer/Controller w/Analog Pot **HCSI** - Programmer/Controller w/ Analog Pot & Upload/Download Capability **HAS2** - Programmer/Controller w/Digital Pot **HCS2** - Programmer/Controller w/Digital Pot & Upload/Download Capability **Human Interface Module, IP 65/54 (NEMA Type 4/12)** **HJP** - Programmer Only **HJ2** - Programmer/Controller w/Digital Pot **Communication Options – B Frame & Up (Adapter 6)** **GM1** - Single Point Remote I/O B Frame **GM2** - RS-232/422/485, DF1 & DH485 B Frame **GM5** - DeviceNet **GM6** - Enhanced DeviceNet **Communication Options – All Frames (Adapter 1)** **GMS1** - GM1 with Snap-In Cradle **GMS2** - GM2 with Snap-In Cradle **GMS5** - GM5 with Snap-In Cradle **GMS6** - GM6 with Snap-in Cradle **Control Interface Options** **L4** - TTL Contact **L4E** - TTL Contact & Encoder Feedback **L7E** - TTL Contact & Encoder Feedback for use with Encoder Loss Detection **L5** - 24V ac/dc **L8E** - 24V ac/dc & Encoder Feedback for use with Encoder Loss Detection **L5E** - 24V ac/dc & Encoder Feedback **L6** - 115V ac **L6E** - 115V ac & Encoder Feedback **L9E** - 115V ac & Encoder Feedback for use with Encoder Loss Detection **Analog Interface Options – Slot A (Choose One)** *Configurable Inputs/outputs are 0-10V or 0-20mA* **LA2** - Two Isolated Configurable Inputs **LA6** - Three Non-isolated Thermistor/RTD Inputs **LA7** - One Isolated Bi-polar Input (±10V) and One **Isolated Configurable Input Analog Interface Options – Slot B (Choose One)** *Configurable Inputs/outputs are 0-10V or 0-20mA* **LA1** - Single-ended, Non-isolated Configurable or Pot & 2 Single-ended, Non-isolated 0-20mA Outputs **LA3** - Two Isolated Configurable Outputs **LA4** - One Isolated Configurable Input & Output **LA5** - One Isolated Pulse Input & Output and One Single-ended, Non-isolated 0-10V Output **Special Coatings** **MX3** -Conformal Coating of Printed Circuit Boards

or

A - 200-240V ac
B - 380-480V ac
BP - 380-480V ac (F Frame)
BPR - 380-480V ac (F Frame) Roll-in Style
BX - Special Rating
C - 500-600V ac
CP- 500-600V ac (F Frame)
CPR - 500-600V ac (F Frame) Roll-in Style
Q - 310V DC
R - 513-620V DC
RX - Special Rating
W - 775V DC

Vol. Code	HP Rating	AQ	BR	CW	A	B	BP/B PR	BX	C	CP/ CPR	Q	R	RX	W
F05	0.37 (0.5)	•	•											
F07	0.56 (0.75)	•	•											
F10	0.75 (1)	•	•	•										
F15	1.2 (1.5)	•	•											
F20	1.5 (2)	•	•	•										
F30	2.2 (3)	•	•	•										
F50	3.75 (5)	•	•	•										
F75	5.5 (7.5)	•	•	•										
F100	7.5 (10)		•	•										
F150	11 (15)		•	•										
F200	15 (20)		•	•										
007	5.5 (7.5)				•						•			
010	7.5 (10)				•						•			
015	11 (15)				•	•					•	•		
020	15 (20)				•	•					•	•		
025	18.5 (25)				•	•			•		•	•		•
030	22 (30)				•	•			•		•	•		•
040	30 (40)				•	•		•	•		•	•		•
050	37 (50)				•	•			•		•	•		•
060	45 (60)				•	•		•	•		•	•	•	•
075	56 (75)				•	•			•		•	•		•
100	75 (100)				•	•			•		•	•		•
125	93 (125)				•	•			•		•	•		•
150	112 (150)					•		•	•			•	•	•
200	149 (200)					•			•			•		•
250	187 (250)					•	•	•	•			•	•	•
300	224 (300)					•	•		•			•		•
400	261 (350)					•	•		•	•		•		•
450	298 (400)					•	•		•	•		•		•
450	336 (450)					•	•		•			•		•
500	373 (500)					•			•			•		•
600	448 (600)					•			•			•		•

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2. When ordering a Bulletin 1336 Drive, also include either a DeviceNet 24Vdc Communication Module or the Enhanced DeviceNet 24Vdc Communication Module.

Description	Catalog Number
DeviceNet 24V dc Communication Module	1203-GK5 (External); 1336-GM5 (Internal)
Enhanced DeviceNet 24V dc Communication Module	1203-GU6 (External); 1336-GM6 (Internal)

3. In addition to ordering your Drive, order RSNetWorx for DeviceNet and DriveExplorer™ Software for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3
DriveExplorer™ Software	9406-4EXP01ENE

4. Record your selection in the bill of materials on page BOM-1.

Bulletin 1336 IMPACT AC Drives

The 1336 IMPACT™ AC Drive with Field-Oriented Control (Force) Technology provides the precise motor speed and torque control necessary to handle some of the most demanding drive applications, including many that are typically reserved for dc drives. Force Technology, an Allen-Bradley patented Field-Oriented Control method, has a proven and unique ability to separate and independently control motor flux and torque down to zero speed.

The 1336 IMPACT AC Drive shares many features with the 1336 PLUS and 1336 FORCE AC Drive family, including a common power structure, communications interface, and the Allen-Bradley line of Communication Modules. 1336 IMPACT Drives also use IGBT technology.

Product Features and Benefits

- Force Technology for demanding speed and torque performance
- patented current regulator provides true control of motor torque
- simple start-up feature provides for fast commissioning and quick auto-tuning of speed and torque loops using motor nameplate data
- encodersless Field-Oriented Control
- SCANport protocol provides common interface for programming devices
- internal process trim controller

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DeviceNet Details (based on the 1203-GU6 module)

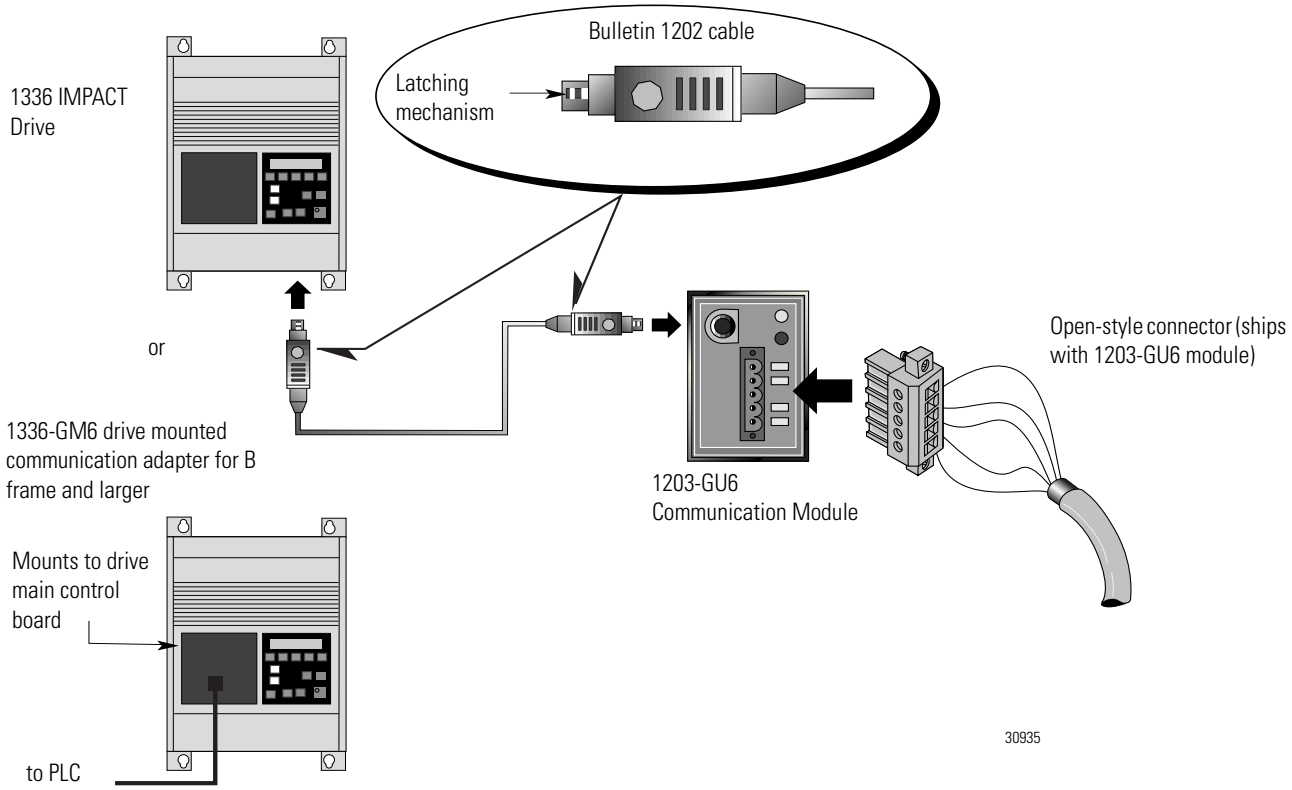
Feature	Bulletin 1336 IMPACT AC Drive
Explicit Peer-to-Peer Messaging	Yes
I/O Peer-to-Peer Messaging	Yes
Configuration Consistency Value	Yes
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes No
DeviceNet Current Draw	60 mA
I/O Data Sizes (min/max)	In: 4,8,12,16 or 20 bytes Out: 4,8,12,16 or 20 bytes

Configuration Information

Configure	By using
Baud Rates/Node Addresses	**1203-GK5:** DIP switches or RSNetWorx for DeviceNet Node Commissioning Tool **1203-GU6:** Autobaud, RSNetWorx for DeviceNet Node Commissioning Tool or serial communication software
Parameters	EDS files downloaded from http://www.ab.com/networks/eds

Physical Connection

You need the following components to connect a Bulletin 1336 IMPACT Drive to a DeviceNet network.



Related Publications

Title	Publication Number
1336 IMPACT Drive Brochure	1336E-BR001A-US-P
DeviceNet Communication Module User Manual	1203-5.12

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Ordering Information

1. Order the Drive with the appropriate catalog number. The following table shows you how to construct the catalog number to include the features you desire:

Example catalog number: 1336E-AQF05AAENHAB

Bulletin:	Voltage:	Nominal HP Rating: kW (HP)	Enclosure Type:	Language Group:	Options:
1336E	**AQ** - 200-240V ac or 310V dc **BR** - 380-480V ac or 513-620V dc **CW** - 500-600V ac or 775V dc	**F05** - 0.37 (0.5) **F07** - 0.56 (0.75) **F10** - 0.75 (1) **F15** - 1.2 (1.5) **F20** - 1.5 (2) **F30** - 2.2 (3) **F50** - 3.7 (5) **F75** - 5.5 (7.5) **F100** - 7.5 (10)	**AA** - NEMA 1 (IP 20) **AE** - NEMA 1 (IP 20)/EMC 0.37-45kW (0.5-60HP) only **AF** - NEMA 4 (IP 65) **AJ** - NEMA 12 (IP 54) **AN** - Open (IP 00)	**EN** - English/English **FR** - English/French **DE** - English/German **IT** - English/Italian **ES** - English/Spanish **PT** - English/Portuguese	**Human Interface Module, IP 20 (NEMA Type 1) Communication Options** **HAB** - Blank — No Functionality **HAP** - Programmer Only **HA1** - Programmer/Controller w/Analog Pot **HA2** - Programmer/Controller w/Digital Pot **Human Interface Module, IP 65/54 (NEMA Type 4/12) Control Interface Options** **HJP** - Programmer Only **HJ2** - Programmer/Controller w/Digital Pot **Communication Options** **GM1** - Single Point Remote I/O **GM2** - RS-232/422/485, DF1 & DH485 **GM5** - DeviceNet **GM6** - Enhanced DeviceNet **Control Interface Options** **L4** - TTL Contact **L7E** - TTL Contact & Encoder Feedback **L5** - 24Vac/dc **L8E** - 24Vac/dc & Encoder Feedback **L6** - 24Vac/dc **L9E** - 115Vac & Encoder Feedback **Environmental Options** **MX3** - Conformal Coating of Printed Circuit Boards
	or				
	A - 200-240V ac **B** - 380-480V ac **BP** - 380-480V ac (F Frame) **BX** - Special Rating **BPR** - 380-480 V ac (F Frame) Roll-in Style **C** - 500-600V ac **CX** - Special Rating **Q** - 310V dc **R** - 513-620V dc **RX** - Special Rating **W** - 775V dc	**007** - 5.5 (7.5) **010** - 7.5 (10) **015** - 11 (15) **020** - 15 (20) **025** - 18.5 (25) **030** - 22 (30) **040** - 30 (40) **050** - 37 (50) **060** - 45 (60) **075** - 56 (75) **100** - 75 (100) **125** - 93 (125) **150** - 112 (150) **200** - 149 (200) **250** - 187 (250) **300** - 224 (300) **350** - 261 (350) **400** - 298 (400) **450** - 336 (450) **500** - 373 (500) **600** - 448 (600) **650** - 485 (650)			

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2. For remote (DIN rail) mounting of the DeviceNet Interface Module, include either a DeviceNet 24Vdc Communication Module or the Enhanced DeviceNet 24Vdc Communication Module when ordering a 1336 IMPACT drive.

Description	Catalog Number
DeviceNet 24V dc Communication Module	1203-GK5 (External); 1203-GM5 (Internal)
Enhanced DeviceNet 24V dc Communication Module	1203-GU6 (External); 1203-GM6 (Internal)

3. In addition to ordering your Drive, order RSNetWorx for DeviceNet and the DriveExplorer™ or DriveTools32™ Software for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3
DriveExplorer™ Software	9306-4EXP01ENE
DriveTools32™ Software	9303-3CS0EFF

4. Record your selection in the bill of materials on page BOM-1.

TIP

Additional options are available in custom and configured drive packages. Contact your local Rockwell Automation office for availability.

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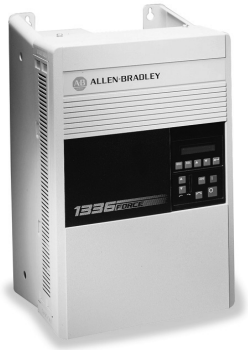
Bulletin 1336 FORCE Field-Oriented Control AC Drives



The 1336 FORCE AC Drive redefines the traditional uses for ac drives by combining high performance motor control, digital communications capabilities, and advanced power structure design in a single product. This Drive uses Force Technology™ to provide the precise speed and torque control necessary to handle demanding applications, including those that are typically used for dc drives. With a built-in auto tuning feature, the 1336 Drive can tune itself to the motor and connected load using only the motor nameplate data. The 1336 FORCE AC drive shares many of the same features as the 1336 IMPACT and 1336 PLUS II drives.

Product Features and Benefits

- Force Technology for demanding speed and torque performance
- SCANport communications protocol provides common interface for programming devices
- digital drive-to-drive communications link supports applications that require speed and/or torque matching between devices
- Internal Process Trim Controller
- time-stamped fault conditions are stored in a non-volatile fault buffer
- optional function block set enhances drive programmability
- optional adapter cards increase I/O flexibility

DeviceNet Details (based on the 1203-GU6 module)

Feature	Bulletin 1336 FORCE Drive
Explicit Peer-to-Peer Messaging	Yes
I/O Peer-to-Peer Messaging	Yes
Configuration Consistency Value	Yes
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes No
DeviceNet Current Draw	60 mA

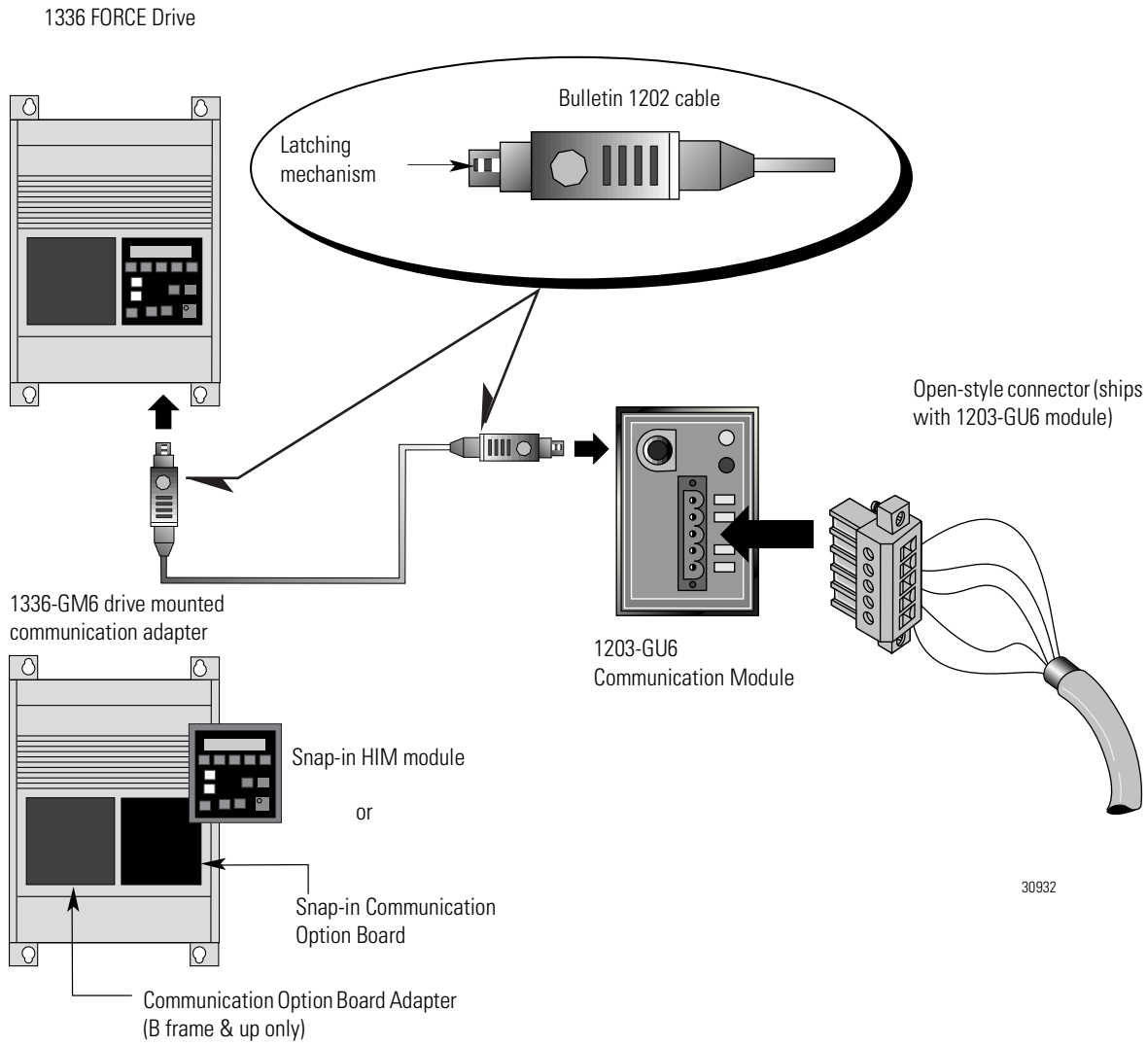
Feature	Bulletin 1336 FORCE Drive
I/O Data Sizes (min/max)	In: 4,8,12,16 or 20 bytes Out: 4,8,12,16 or 20 bytes

Configuration Information

Configure	By using
Baud Rates/Node Addresses	RSNetWorx for DeviceNet Node Commissioning Tool or serial communication software
Parameters	EDS files downloaded from http://www.ab.com/networks/eds

Physical Connection

You need the following components to connect a Bulletin 1336 FORCE Drive to a DeviceNet network.



Related Publications

Title	Publication Number
AC Drive, DC Performance Brochure	1336 FORCE-1.0-DEC99
DeviceNet Communication Module User Manual	1203-5.12

Ordering Information

1. Order the Drive with the appropriate catalog number. The following table shows you how to construct the catalog number to include the features you desire:

Example catalog number: 1336T-A001AAGTENHAB

TIP When ordering a 1336 FORCE Drive, add all options codes to the end of the complete catalog number.

Bulletin	Voltage	Nominal HP Rating KW (HP)	Enclosure	Adapter	Options
1336T	**A**-200-240 V ac **B**-380-480 V ac **BX**-Special Rating **BP**-380-480 V ac (F Frame) **BPR**-380-480 V ac **C**-500-600 V ac **CX**-Special Rating **CP**-500-600 V ac (F Frame) **CPR**-500-600V ac (F Frame) Roll-in Style	**001**-0.75 (1) **003**-2.2 (3) **007** - 5.5 (7.5) **010** - 7.5 (10) **015** - 11 (15) **020** - 15 (20) **025** - 18.5 (25) **030** - 22 (30) **040** - 30 (40) **050** - 37 (50) **060** - 45 (60) **075** - 56 (75) **100** - 75 (100) **125** - 93 (125) **150** - 112 (150) **200** - 149 (200) **250** - 187 (250) **300** - 224 (300) **350** - 261 (350) **400** - 298 (400) **450** - 336 (450) **500** - 373 (500) **600** - 448 (600) **650** - 485 (650)	**AA**-IP20 General Purpose **AE**-IP20 CE Conformance **AF**-IP65 Resist Water, Dust **AJ**-IP54 Industrial Use **AN**-IP00 Open	**PLC Comm. Adapter** **GT1EN**-English **GT1FR**-French **GT1ES**-Spanish **GT1DE**-German **GT1IT**-Italian **Standard Adapter** **GT2EN**-English **GT2FR**-French **GT2ES**-Spanish **GT2DE**-German **GT2IT**-Italian	**Human Interface Module, IP 20 (NEMA Type 1)** **HAB** - Blank — No Functionality **HAP** - Programmer Only **HA1** - Programmer/Controller w/Analog Pot **HA2** - Programmer/Controller w/Digital Pot **Human Interface Module, IP 66** **HJP - Programmer Only** **HJ2** - Programmer/Controller w/Digital Pot **Communication Options** **GM1** - Single Point Remote I/O **GM2** - RS-232/422/485, DF1 & DH485 **GM5** - DeviceNet **GM6** - Enhanced DeviceNet **Control Interface Options** **L4** - TTL Contact **L5** - 24Vac/dc **L6** - 24Vac/dc **Environmental Options** **MX3** - Conformal Coating of Printed Circuit Boards **Common Mode Chokes (F Frame Only)** **CM** - Internal Common Mode **Choke** **NCM** - No Common Mode Choke

2. When ordering a Bulletin 1336 Drive, also include either a DeviceNet 24Vdc Communication Module or the Enhanced DeviceNet 24Vdc Communication Module.

Description	Catalog Number
DeviceNet 24V dc Communication Module	1203-GK5 (External); 1336-GM5 (Internal)
Enhanced DeviceNet 24V dc Communication Module	1203-GU6 (External) 1203-GM6 (Internal)

3. In addition to ordering your Drive, order RSNetWorx for DeviceNet and the DriveExplorer™ or DriveTools32™ Software for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3
DriveExplorer™ Software	9306-4EXP01ENE
DriveTools32™ Software	9303-3CS0EFF

4. Record your selection in the bill of materials on page BOM-1.

Bulletin 1397 DC Digital Drives

The 1397 DC Digital Drive is designed to integrate easily into automation systems. Drive communications are accomplished through the SCANport module. This drive uses the Human Interface Module (HIM) for drive operation, setup, metering and diagnostics. It is designed to remove the drive from the critical path with its reduced component count feature. This helps maximize reliability and decrease the need for maintenance.

Product Features and Benefits

- HIM operator interface
- multiple communication options for easy and flexible integration
- extensive diagnostics
- auto-timing of speed and current loops
- regenerative and non-regenerative configurations
- semiconductor fuse protection standard
- phase-insensitive ac line connections

DeviceNet Details (based on the 1203-GU6 module)

Feature	Bulletin 1397 Digital DC Drive
Explicit Peer-to-Peer Messaging	Yes
I/O Peer-to-Peer Messaging	Yes
Configuration Consistency Value	No
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes

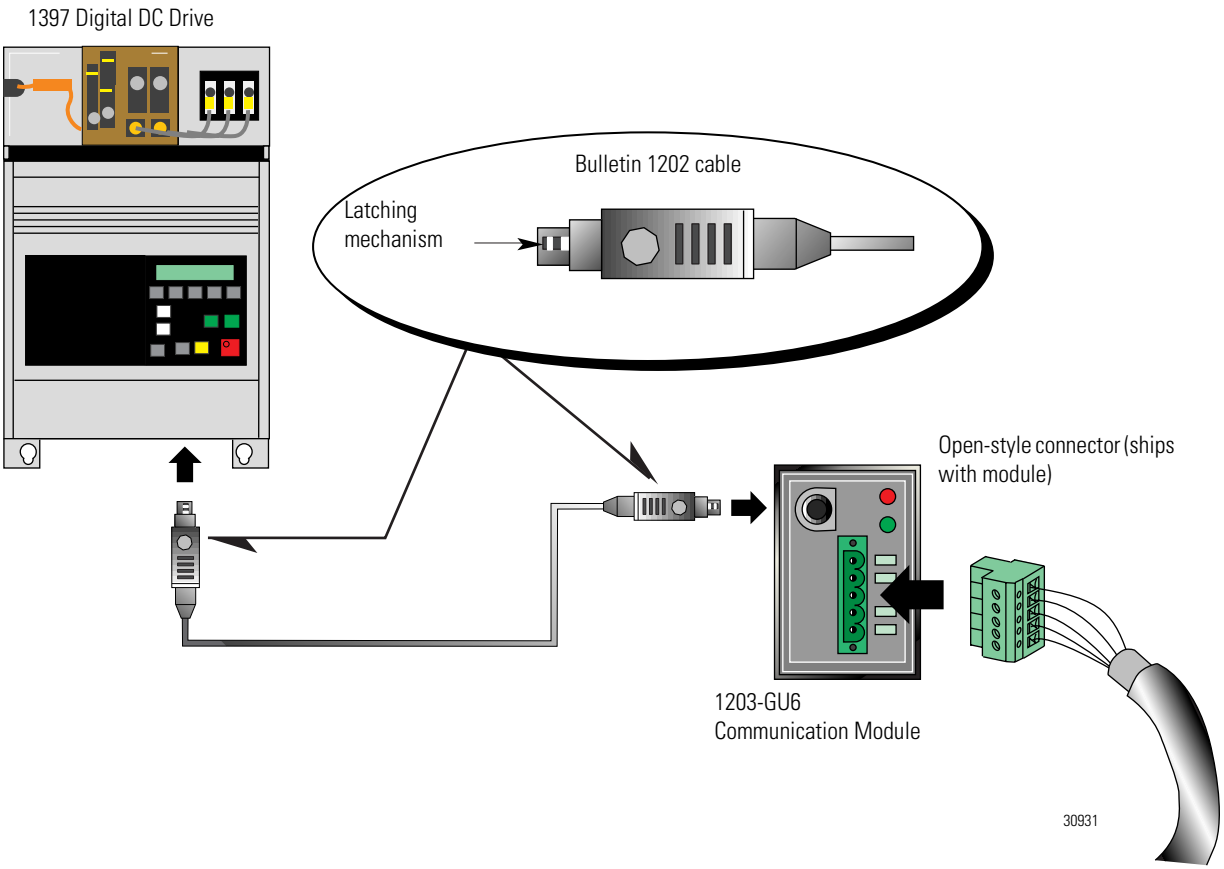
Feature	Bulletin 1397 Digital DC Drive
Master/Scanner	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes No
DeviceNet Current Draw	60 mA
I/O Data Sizes (min/max)	In: 4,8,12,16 or 20 bytes Out: 4,8,12,16 or 20 bytes

Configuration Information

Configure	By using
Baud Rates/Node Addresses	RSNetWorx for DeviceNet Node Commissioning Tool or serial communication software
Parameters	EDS files downloaded from http://www.ab.com/networks/eds

Physical Connection

You need the following components to connect a Bulletin 1397 Digital DC drive to a DeviceNet network.



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Related Publications

Title	Publication Number
1397 Digital DC Drive Brochure	1397-BR001A-EN-P
DeviceNet Communication Module	1203-5.12

Ordering Information

1. Order the Drive with the appropriate catalog number. The following table shows you how to construct the catalog number to include the features you desire:

Example catalog number:1397-B005R-DS

Bulletin	Letter	Rating-kW (HP)	Regen/ Non-regen	Options
1397-	**A** (230V ac)	**001**-1.5 (1.1) **002**-2(1.5) **003**-3(2.2) **005**-3.7(5) **007**-5.5(7.5) **010**-7.5(10) **015**-11(15) **020**-15(20) **025**-18.5(25) **030**-22(30) **040**-30(40) **050**-37(50) **060**-45(60) **075**-56(75) **100**-75(100) **125**-93(125) **150**-112(150)	**N**-Non-regenerative **R**-Regenerative	**DS**-AC Line Disconnect **MB**- Blower Motor Starter **L10**-Control Interface **L11**-I/O Expansion Card **DB**-Dynamic Braking **FS1**-Enhanced Field Supply **FS2**-Field Current Regulator **PE**-Pulse Encoder Kit **AC**-AC Tachometer Kit **AA**-NEMA 1 **HAB**-Blank-No Functionality **HAP**-Programmer Only **HA1**-Programmer/Controller with Analog Pot **HA2**-Programmer/Controller with Digital Pot **1203-GK5**-DeviceNet (24V dc) **1203-GU6**-Enhanced DeviceNet (24V dc)

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Bulletin	Letter	Rating-kW (HP)	Regen/ Non-regen	Options
1397-	**B** (230V ac)	**003**-3(2.2) **005**-3.7(5) **007**-5.5(7.5) **010**-7.5(10) **015**-11(15) **020**-15(20) **025**-18.5(25) **030**-22(30) **040**-30(40) **050**-37(50) **060**-45(60) **075**-56(75) **100**-75(100) **125**-93(125) **150**-112(150) **200**-149(200) **250**-186(250) **300**-224(300) **400**-298(400) **500**-373(500) **600**-448(600)	**N**-Non-regenerative **R**-Regenerative	**DS**-AC Line Disconnect **MB**- Blower Motor Starter **L10**-Control Interface **L11**-I/O Expansion Card **DB**-Dynamic Braking **FS1**-Enhanced Field Supply **FS2**-Field Current Regulator **PE**-Pulse Encoder Kit **AC**-AC Tachometer Kit **AA**-NEMA 1 **HAB**-Blank-No Functionality **HAP**-Programmer Only **HA1**-Programmer/Controller with Analog Pot **HA2**-Programmer/Controller with Digital Pot **1203-GK5**-DeviceNet (24V dc) **1203-GU6**-Enhanced DeviceNet (24V dc)

2. When ordering a Bulletin 1397 Drive, also include either a DeviceNet 24Vdc Communication Module or the Enhanced DeviceNet 24Vdc Communication Module.

Description	Catalog Number
DeviceNet 24V dc Communication Module	1203-GK5
Enhanced DeviceNet 24V dc Communication Module	1203-GU6

3. In addition to ordering your Drive, order RSNetWorx for DeviceNet and the DriveExplorer™ Software for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3
DriveExplorer™ Software	9306-4EXP01ENE

4. Record your selection in the bill of materials on page BOM-1.

Bulletin 1557 Medium Voltage Drive

The 1557 Medium Voltage Drive uses CSI-PWM technology and direct vector control to provide a near sinusoidal motor waveform for use with new and retrofit standard ac motors.

DeviceNet Features and Benefits

- modify parameters to multiple drives across the network via a PC or PLC processor

Product Features and Benefits

- wide product range: 100-10,000 hp (2,300-6,900V)
- no DV/DT stress to motor
- no DI/DT stress to motor
- virtually unlimited motor cable distance
- inherent regenerative motor braking
- low voltage test modes
- 98.6% efficiency at full load and full speed

DeviceNet Details (based on the 1203-GU6 module)

Feature	Bulletin 1557 Medium Voltage Drive
Explicit Peer-to-Peer Messaging	Yes
I/O Peer-to-Peer Messaging	Yes
Configuration Consistency Value	No
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes No
DeviceNet Current Draw	60 mA
I/O Data Sizes (min/max)	In: 4,8,12,16 or 20 bytes Out: 4,8,12,16 or 20 bytes

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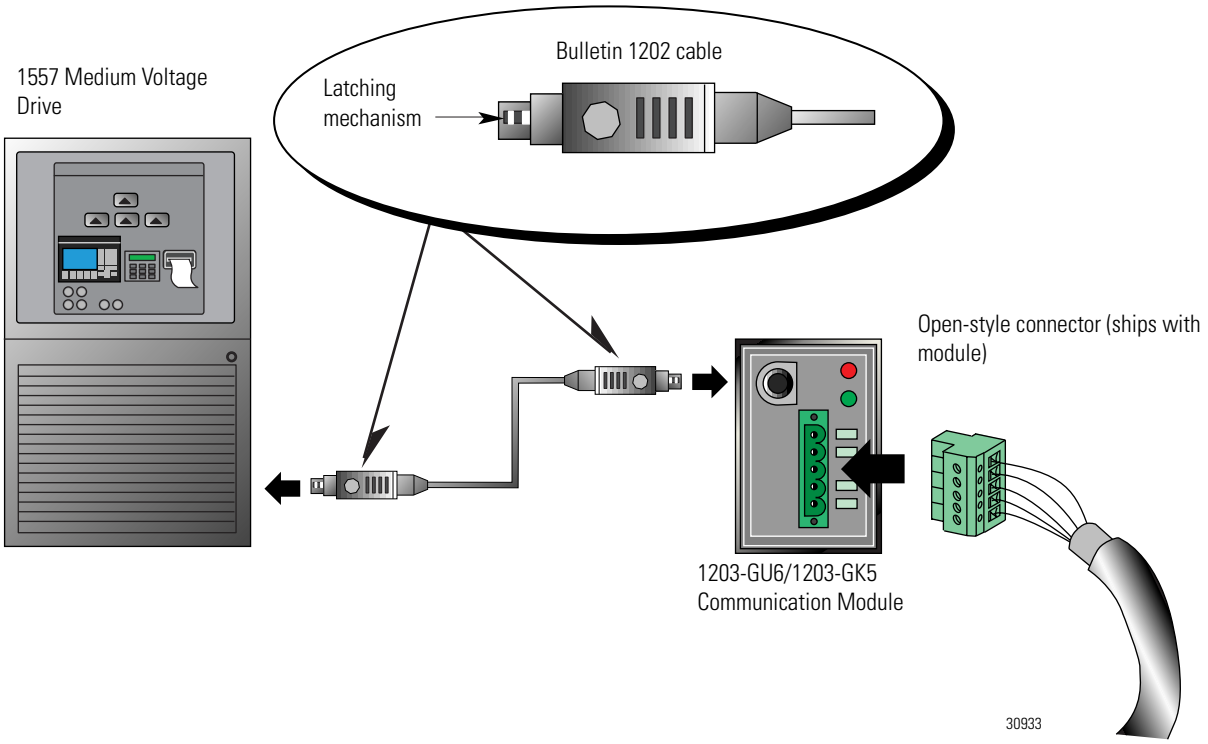
Configuration Information

Configure	By using
Baud Rates/Node Addresses	RSNetWorx for DeviceNet Node Commissioning Tool or serial communication software
Parameters	EDS files downloaded from http://www.ab.com/networks/eds

Physical Connection

You need the following components to connect a 1557 Medium Voltage Drive to a DeviceNet network.



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Related Publications

Title	Publication Number
The Preferred Choice in M.V. Speed Control	1557-1.0
M.V. Speed Control Product Data	1557-1.1
M.V. Speed Control Specification Guide	1557-2.2
DeviceNet Communication Module User Manual	1203-5.12

Ordering Information

Follow the steps below to order the Drive:

1. Order the Drive with these catalog numbers:

Description	Horsepower	Bulletin Number
1557 Air-cooled Drive	200-3,500	1557
1557M Mini-Drive	100-500	1557M
1557L Liquid-Cooled Drive	3,000-16,000	1557L
1557S Synchronous Drive	200-16,000	1557S

2. When ordering a Bulletin 1557 Drive, also include either a DeviceNet 24Vdc Communication Module or the Enhanced DeviceNet 24Vdc Communication Module.

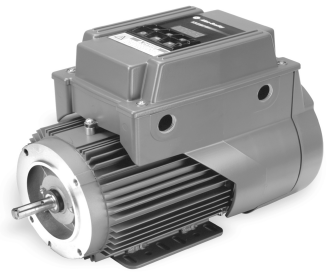
Description	Catalog Number
DeviceNet 24V dc Communication Module	1203-GK5
Enhanced DeviceNet 24V dc Communication Module	1203-GU6

3. In addition to ordering your Drive, order RSNetWorx for DeviceNet and the DriveExplorer™ Software for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3
DriveExplorer Software	9306-4EXP01ENE

4. Record your selection in the bill of materials on page BOM-1.

1329I Integrated Drive/Motor



The 1329I Integrated Drive/Motor provides the functions of a volts/hertz PWM ac drive with an inverter duty ac induction motor. Three-phase 230V ac & 460V ac and single-phase 115V ac & 230V ac input ratings are available.

The DeviceNet communication option is a low cost solution for control and monitoring the drive. This option mounts directly under the existing cover. This reduces installation time and saves valuable panel space.

DeviceNet Features and Benefits

- EDS files are self-generated (using RSNetWorx for DeviceNet software), helping to simplify DeviceNet connectivity
- node address and baud rate can be set via DIP switches
- DIP switch factory defaults allow node address and baud rate to be configured via the network
- offers flexibility for interfacing with various Rockwell Automation products

Product Features and Benefits

- compact package for easy installation in place of your conventional motor
- short motor leads that eliminate the reflected wave effects associated with most PWM inverters
- NEMA Type 12 (IP54) enclosure for operation in harsh environments
- top mounted conduit box provides convenient access to control board and terminal blocks for easy wiring, setup and maintenance
- LED display for status and fault code annunciation

DeviceNet Details

Feature	Bulletin 1329I Drive
Explicit Peer-to-Peer Messaging	No
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	Yes
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes

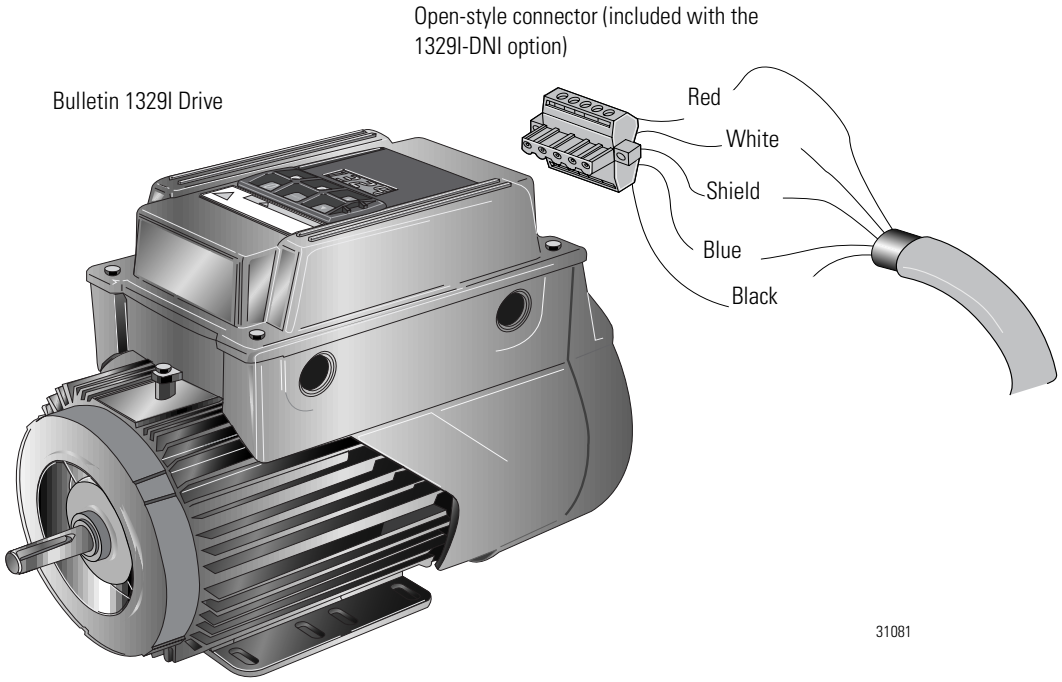
Feature	Bulletin 1329I Drive
Master/Scanner	Yes
I/O Messaging Change-of-state (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes No
DeviceNet Current Draw	40 mA
I/O Data Sizes (min/max)	In: 0, 1, 4 bytes Out: 0, 1, 4 bytes

Configuration Information

Configure	By using
Baud Rates/Node Address	DIP switches, RSNetWorx for DeviceNet Node Commissioning Tool, or EDS files via RSNetWorx for DeviceNet
Parameters	EDS files via RSNetWorx for DeviceNet

Physical Connection

You need the following components to connect a Bulletin 1329I Drive to a DeviceNet network.



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Related Publications

Title	Publication Number
Bulletin 1329I Brochure	1329I-1.0-FEB00
Bulletin 1329I1329I User Manual	1329I-5.5
Bulletin 1329I1329I Quick Reference	1329I-5.16
Bulletin 1329I1329I DeviceNet User Manual	1329I-5.3

Ordering Information

Follow the steps below to order the Drive:

1. Order the Drive with these catalog numbers:

	Drive Ratings				
Input Voltage Rating	**Frame**	**HP**	**Input Current Rating**	**Catalog Number Standard Display**	**Catalog Number Local Operator Control**
115V 1 Phase	56	1	14.0A	1329I-BJ00118BCA-B	1329I-BJ00118BCA-A
	140	1	14.0A	1329I-BJ00118BCB-B	1329I-BJ00118BCB-A
230V 1 Phase	56	1	5.8A	1329I-BK00118BCA-B	1329I-BK00118BCA-A
	140	1	5.8A	1329I-BK00118BCB-B	1329I-BK00118BCB-A
	140	2	14.0A	1329I-BK00218BCB-B	1329I-BK00218BCB-A
230V 3 Phase	56	1	4.5A	1329I-BL00118BCA-B	1329I-BL00118BCA-A
	140	1	4.5A	1329I-BL00118BCB-B	1329I-BL00118BCB-A
	140	2	7.6A	1329I-BI00218BCB-B	1329I-BL00218BCB-A
460V 3 Phase	56	1	2.3A	1329I-BM00118BCA-B	1329I-BM00118BCA-A
	140	1	2.3A	1329I-BM00118BCB-B	1329I-BM00118BCB-A
	140	2	3.7A	1329I-BM00218BCB-B	1329I-BM00218BCB-A
	180	3	5.7A	1329I-BM00318BCC-B	1329I-BM00318BCC-A
	180	5	9.0A	1329I-BM00518BCC-B	1329I-BM00518BCC-A

2. In addition to ordering your Drive/Motor, order the DeviceNet Communication Option, and for configuration purposes, RSNetWorx for DeviceNet.

Description	Catalog Number
DeviceNet Communication Option	1392I-DN1
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

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PowerFlex 70 AC Drive

The PowerFlex 70 AC Drive, the lowest horsepower member of the Allen-Bradley PowerFlex family of drives, is designed to meet global OEM and end-user demands for space savings, cost efficiency, and reliability. PowerFlex 70 AC Drives provide versatile, application-configurable features, such as volts-per-hertz or sensorless vector control, in a compact, panel-mount package.

PowerFlex 70 Drives feature a flexible, compact form factor and meet world power requirements, packaging requirements, and electromagnetic compatibility (EMC) standards for out-of-the-box performance. Both LED and LCD Human Interface Modules (HIMs) are available, offering flexible, cost-effective options for your application. Internal Communication Modules allow the user to integrate the Drive into the manufacturing process via Rockwell Automation's NetLinx Open Architecture-based networks.

DeviceNet Features and Benefits

- support for all major methods for I/O messaging, allowing optimal network throughput
- explicit messaging provides full parameter read & write access
- autobaud setting automatically adjusts the adapter baud rate to that of the network
- peer-to-peer I/O capability allows drives to communicate directly with each other
- several user-configurable fault responses (Fault, Stop, Hold Last, Zero Data, and Send Fault Config.) are available to address different application needs

Product Features and Benefits

- can be programmed for Volts-per-Hertz or Sensorless Vector control to support a variety of applications
- provides a combination of built-in digital and analog I/O to meet most external control needs
- offers an internal communications option for integrating the drive into the manufacturing process
- clearly-marked, conveniently-placed terminal blocks provide direct access for power and control wiring

DeviceNet Details (based on 20-COMM-D)

Feature	PowerFlex 70 Drive
Explicit Peer-to-Peer Messaging	Yes
I/O Peer-to-Peer Messaging	Yes
Configuration Consistency Value	Yes
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes No
DeviceNet Current Draw	60 mA
I/O Data Sizes (min/max)	In: 4,8,12,16 or 20 bytes Out: 4,8,12,16 or 20 bytes

Configuration Information

Configure	By using
Baud Rates/Node Address	RSNetWorx for DeviceNet Node Commissioning Tool, or serial communication software
Parameters	EDS files downloaded from http://www.ab.com/networks/eds

Physical Connection

Connect thick or thin DeviceNet cable to the 5-pin open-style connector (supplied with the 20-COMM-D Adapter) on the Adapter.

Related Publications

Title	Publication Number
Optimized Simplicity PowerFlex 70 AC Drive Brochure	20A-BR001B-EN-P
PowerFlex 70 Adjustable Frequency AC Drive User Manual	20A-UM001C-EN-P
PowerFlex DeviceNet Adapter User Manual	20COMM-UM002B-EN-P

Ordering Information

Follow the steps below to order the Drive:

1. Order the Drive with the appropriate catalog number. The following table shows you how to construct the catalog number to include the features you desire:

   Example catalog number: 20A-B2P1A1AYYNDNN

TIP When ordering a PowerFlex 70 Drive, add all option codes to the end of the complete catalog number.

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Bulletin	Voltage	Rating-kW (HP)	Enclosure	HIM	Documentation	Brake IGBT	Brake Resistor	Emission Class	Comm Slot	N/A	N/A
20A	**B-** 240V ac, 3Ph. SA Type	**Output Current @ 240V ac input**	**A-** IP20 (NEMA Type 1)	**0-** Blank HIM	**A-** User Manual	**Y-** Yes	**Y-** Yes	**A-** Filtered	**D-** Device-Net	**N**	**N**
	D- 480V ac, 3Ph. SA Type	**2P2**- 2.2 A, 0.37 (0.5)	**F-** Flange Mount	**1-** Digital LED HIM	**N-** No Manual		**N-** No	**N**- Not Filtered	**R-** RIO		
		4P2- 4.2 A, 0.75 (1.0)		**2-** Digital LCD HIM					**N-** None		

Bulletin	Voltage	Rating-kW (HP)	Enclo-sure	HIM	Docu-menta-tion	Brake IGBT	Brake Resis-tor	Emis-sion Class	Comm Slot	N/A	N/A
		6P8- 6.8 A, 1.5 (2.0)		**3-** Full Numeric LCD HIM							
		9P6- 9.6 A, 2.2 (3.0)		**4-** Analog LCD HIM							
		015- 15.3 A, 4.0 (5.0)		**5-** Prog. Only HIM							
		022- 22 A, 5.5 (7.5)									
		028- 28 A, 7.5 (10)									
		Output Current @ 480V ac Input									
		1P1- 1.1 A, 0.37 (0.5)									
		2P1- 2.1 A, 0.75 (1.0)									
		3P4 - 3.4 A, 1.5 (2.0)									
		5P0- 5.0 A, 2.2 (3.0)									
		8P0- 8.0 A, 3.7 (5.0)									
		011- 11 A, 5.5 (7.5)									
		014- 14 A, 7.5 (10)									
		022- 22 A, 11 (15)									
		027- 27 A, 15 (20)									

2. When ordering a PowerFlex 70 Drive, also include the PowerFlex DeviceNet Adapter.

Description	Catalog Number
PowerFlex DeviceNet Adapter	20-COMM-D

3. In addition to ordering your Drive, order RSNetWorx for DeviceNet and the DriveExplorer Software for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3
DriveExplorer Software	9306-4EXP01ENE

4. Record your selection in the bill of materials on page BOM-1.

Motion Control

The solution to your motion control applications resides within the Rockwell Automation Motion Control product families. Offering industrially hardened products, Rockwell provides comprehensive factory automation solutions for demanding applications. Rockwell Automation Motion Control systems feature superior performance and reliable operation.

Whether you need the flexibility of our wide range of communications options, global product support, or the precision of our advanced motor control, you'll find Rockwell Automation Motion Control products are meant to move.

- **Ultra3000 and Ultra5000 with DeviceNet** - gives you the ability to operate your digital servo drive directly from any compatible control, such as a PLC. Both Ultra3000 and Ultra5000 with DeviceNet support generic object mapping and unconnected message manager (UCMM) for dynamic and multiple explicit message connections. The Ultra3000, with its powerful indexing feature, becomes a powerful and cost-effective solution for point-to-point applications.

  The fully programmable Ultra5000 Intelligent Positioning Drive easily integrates into your complete automation solution using the DeviceNet interface.The Ultra5000 and the DeviceNet network combine high-performance motion control capabilities with the versatility of network communications.

- **1394 Digital, AC, Multi-Axis Motion Control System** - a full-featured digital ac, closed-loop servo controller that integrates multi-axis motion control and servo drive functions. This single, compact system has the high-performance position, velocity, and torque control of one to four servo motors.

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Ultra3000 and Ultra5000 with DeviceNet

The Ultra3000 is an easy-to-use, high-performance, digital servo drive in a compact package. Reduced size, high performance and low cost make the Ultra3000 an attractive solution for a wide variety of applications. It is ideal for stepper, stand-alone indexing, or standard velocity or position control. With DeviceNet, users can dynamically adjust and change Ultra3000 commands from a PLC or Operator Interface. The Indexing option combined with DeviceNet allows the end user to perform complete motion profiles over DeviceNet. DeviceNet communication also provides Ultra3000 system diagnostics at the system controller.

The Ultra5000 is a complete single-axis motion control system that includes an intelligent motion controller and digital drive in an integrated package. The Ultra5000 is tailored for high-speed motion processing, position capture, and advanced math capabilities to increase application performance. When communicating over the DeviceNet network, the Ultra5000 user program can dynamically adjust to changing commands and parameters from a supervisory PLC or Operator Interface. Multiple Ultra5000 Drives can be networked with a single PanelView Operator Interface for a cost-effective application solution.

The Ultra5000 satisfies the most challenging motion control tasks, including feed-to-length, flying shear, high-speed packaging, labeling and stamping applications.

DeviceNet Features and Benefits

- single DeviceNet connector eliminates control to drive wiring and reduces installation cost
- remote parameter download and configuration of drive
- status LEDs for easy local assessment of module and network status

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Product Features and Benefits

- rotary selector switches for setting address and communication rate
- plugable terminal block connectors (catalog number 1787-PLUG10R)
- minimal wiring, resulting in reduced start-up time
- inter-operability with other manufacturers' components
- rapid troubleshooting and equipment repair
- modification of individual device parameters using the network
- UCMM for remote parameter configuration

DeviceNet Details

Feature	Ultra3000 and Ultra5000
Explicit Peer-to-Peer Messaging	No
I/O Peer-to-Peer Messaging	No
Configuration Consistency Value	No
Faulted Address Recovery	No
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No
I/O Slave Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes No
DeviceNet Current Draw	60 mA max
I/O Data Sizes (min/max)	In: 4 bytes Out: 0 bytes

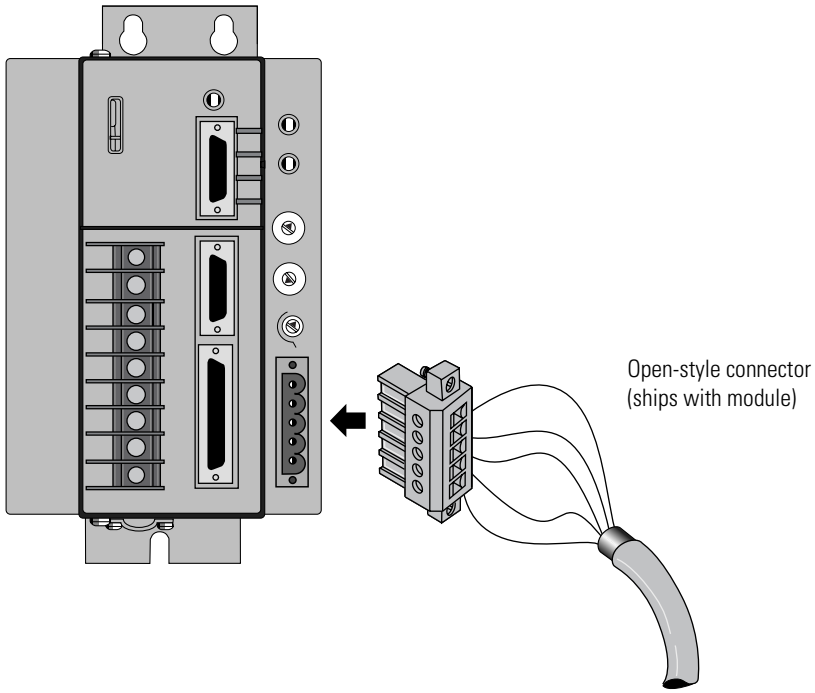
Configuration Information

Configure	By using
Baud Rates/Node Addresses	Rotary switches, RSNetWorx for DeviceNet Node Commissioning Tool, or via EDS files through RSNetWorx for DeviceNet
Parameters	EDS files downloaded from http://www.ab.com/networks/eds

Physical Connection

You need the following components to connect an Ultra3000 or Ultra5000 to a DeviceNet network.

2098 Ultra 3000 shown



Related Publications

Title	Publication Number
Ultra Family Publication List	2098-CO001B-EN-P
Ultra3000 Installation Manual	2098-IN003A-EN-P
Ultra5000 Installation Manual	2098-IN001C-EN-P
Motion Control Selection Guide	GMC-SG001D-EN-P
Ultra Family Digital Servo Drives Price Sheet	2098-PL001B-EN-P

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Ordering Information

Follow the steps below to order the Drive:

1. Order the Drive with these catalog numbers:

Description	Catalog Number
Ultra3000 Drives:	
Ultra3000 Digital Servo Drive, 500W	2098-DSD-005-DN
Ultra3000 Indexing Drive, 500W	2098-DSD-005X-DN
Ultra3000 Digital Servo Drive, 1kW	2098-DSD-010-DN
Ultra3000 Indexing Drive, 1kW	2098-DSD-010X-DN
Ultra3000 Digital Servo Drive, 2kW	2098-DSD-020-DN
Ultra3000 Indexing Drive, 2kW	2098-DSD-020X-DN
Ultra3000 Digital Servo Drive, 3kW	2098-DSD-030-DN
Ultra3000 Indexing Drive, 3kW	2098-DSD-030X-DN
Ultra3000 Digital Servo Drive, 7.5kW	2098-DSD-075-DN
Ultra3000 Indexing Drive, 7.5kW	2098-DSD-075X-DN
Ultra3000 Digital Servo Drive, 15kW	2098-DSD-150-DN
Ultra3000 Indexing Drive, 15kW	2098-DSD-150X-DN
Ultra5000 Drives:	
Ultra5000 Positioning Drive, 500W	2098-IPD-005-DN
Ultra5000 Positioning Drive, 1kW	2098-IPD-010-DN
Ultra5000 Positioning Drive, 2kW	2098-IPD-020-DN
Ultra5000 DeviceNet Expansion Kit	2090-U5EK-DN

TIP

For complete ordering information, refer to the Ultra Family Digital Servo Drives Price Sheet, publication 2098-PL001B-EN-P.

2. In addition to ordering your Drive, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

1394 Digital, AC, Multi-Axis Motion Control System

The 1394 module is part of an ac, multi-axis, motion control and drive family. Its unique design allows the 1394 to be used as a stand-alone servo drive.

The 1394 motion control system provides direct line connections (without transformer) for 380 to 460V three-phase input power, efficient IGBT power conversion, and slide-and-lock, module-to-module connection systems. Each system module can be configured with up to four axis modules, with each axis module interfacing with a motor. Because of its integrated design, the 1394 decreases the number of electrical connections and provides significant panel space savings.

DeviceNet Features and Benefits

- configure, tune, and start up via PC or PLC processor
- modify parameters to adapt to application modules
- read load and performance information for trending and diagnostics
- read machine velocity or position

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Product Features and Benefits

- one- to four-axis-field configurable
- state-of-the-art digital signal processing for superior performance
- advanced auto-tuning and startup simplifies commissioning

DeviceNet Details

Feature	1394 Motion Control System
Explicit Peer-to-Peer Messaging	Yes
I/O Peer-to-Peer Messaging	Yes
Configuration Consistency Value	No
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 Yes Yes Yes No
DeviceNet Current Draw	60 mA max
I/O Data Sizes (min/max)	0/10 bytes

Configuration Information

Configure	By using
Baud Rates/Node Addresses	RSNetWorx for DeviceNet
Parameters	EDS files downloaded from http://www.ab.com/networks/eds

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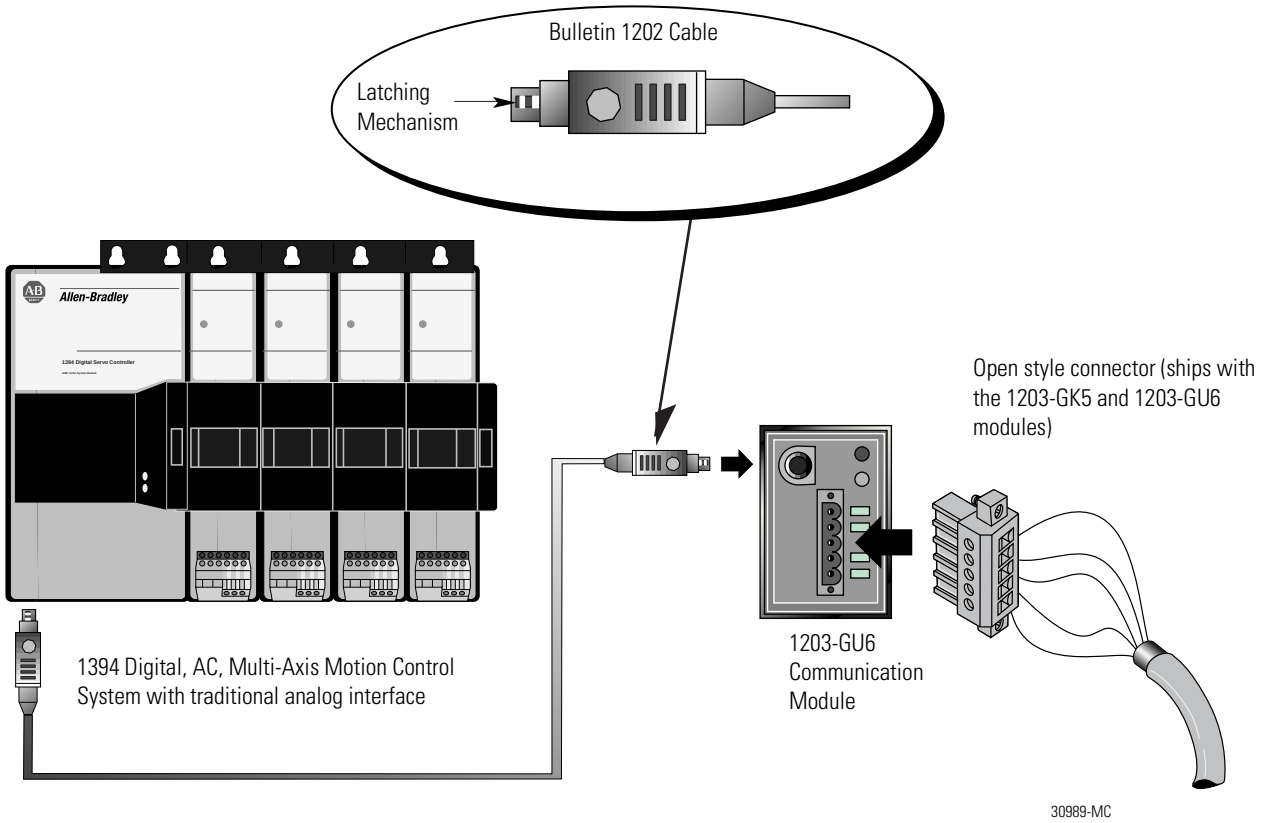
Physical Connection

You need the following components to connect a 1394 Digital AC Motion Control System to a DeviceNet network.



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Related Publications

Title	Publication Number
1394 Color Brochure	1394-1.0
1394 User Manual	1394-5.0
Enhanced DeviceNet Communication Module User Manual	1203-5.12

Ordering Information

1. Order the Drive with the appropriate catalog number. The table on the next page shows you how to construct the catalog number to include the features you desire:

Example catalog number:1394C-SJT05A

Bulletin:	Type:	Input Voltage:	Input Phase:	kW rating:	Factory Installed Options:
1394C-	**S** - System Module	**J** - 380/460V ac, 50/60 Hz	**T -** Three-phase	**05** - 5kW **10** - 10kW **22** - 22kW	**A** - With +/- 10V dc analog Input (no HIM)

2. Record your selection in the bill of materials on page BOM-1.

Notes:

PC Interfaces

Rockwell Automation provides three PC-ready DeviceNet interfaces: a PCMCIA Interface Card, a PCI Interface Card, and an RS-232 Interface Module. These cards use RSLinx™ as their messaging application interface to software such as RSNetWorx™ for monitoring data and configuring networks and devices.

- **DeviceNet 1784-PCD Communication Interface Card** - use this card when your computers use a Type II PCMCIA slot. The card lets you take advantage of the portability of laptop computers.
- **DeviceNet 1784-PCID Communication Interface Card** - designed for the standard PCI-bus used in the majority of PCs manufactured today. The card provides you with the capability to link your PC application to the DeviceNet network.

- **DeviceNet 1770-KFD RS-232 Personal Computer Interface** - lets you connect a PC-compatible laptop, desktop, or notebook computer to the DeviceNet network. Once connected, your computer is established as a node on the DeviceNet network.

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DeviceNet 1784-PCD Communication Interface Card

With the Rockwell Automation DeviceNet 1784-PCD Communication Interface Card, you can use any Microsoft® Windows™-based computer with a PC card interface (e.g., a laptop/notebook computer) to connect to the DeviceNet network. Once you are connected, maintenance and troubleshooting are easy since you can program, monitor, and configure all network operations and devices directly from the PC. Because the 1784-PCD card can be upgraded with FLASH software, you can easily upgrade it to the latest functionality.

DeviceNet Features and Benefits

- support for explicit messaging
- faster startup due to Faulted Address Recovery
- support for all DeviceNet standard baud rates
- support for DeviceNet Passive and Test Modes

Product Features and Benefits

- all electronic components are located on a Type II PCMCIA interface card—no need for an external electronic box
- simple, one-step connection to DeviceNet using the supplied cable
- high-speed, 24 MHz 188 processor
- the ability to write your own data collection application in Visual Basic, C++, etc., using the RSLinx standard API
- easy FLASH upgrades for future enhancements
- the ability to link to OPC/DDE for process control
- drivers for Windows 95/98/Me, Windows NT, and Windows 2000
- DeviceNet connectivity for RSLinx and RSNetWorx for DeviceNet
- support for autobaud and auto-search for vacant node address

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DeviceNet Details

Feature	1784-PCD
Explicit Messaging	Yes
I/O Messaging	No
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes

Feature	1784-PCD
Master/Scanner	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 N/A N/A N/A N/A
Power Requirements PC DeviceNet	 5V @ 210 mA max 25V max @ 10 mA max
I/O Data Size	N/A

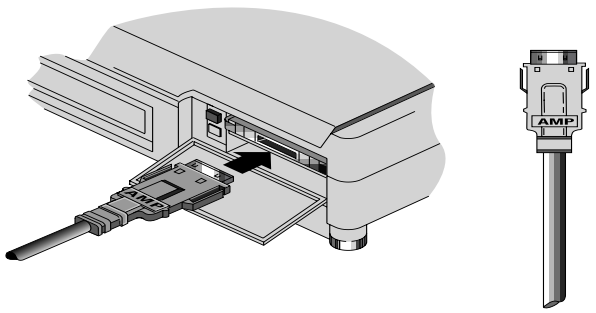
Configuration Information

Configure	By using
Baud Rates, Node Addresses and Parameters	RSNetWorx for DeviceNet

Physical Connection

You need the following components to connect a 1784-PCD Card to a DeviceNet network.

The 1784-PCD card is inserted into the PCMCIA bus slot of your computer.



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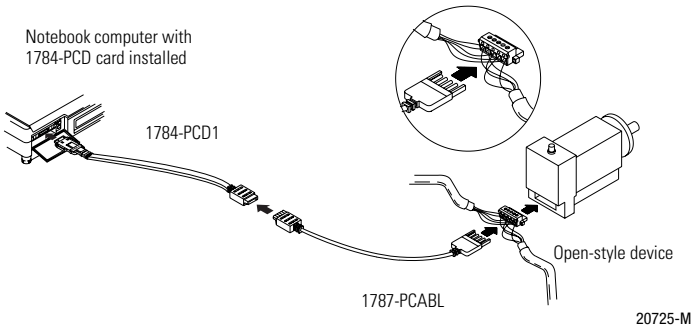
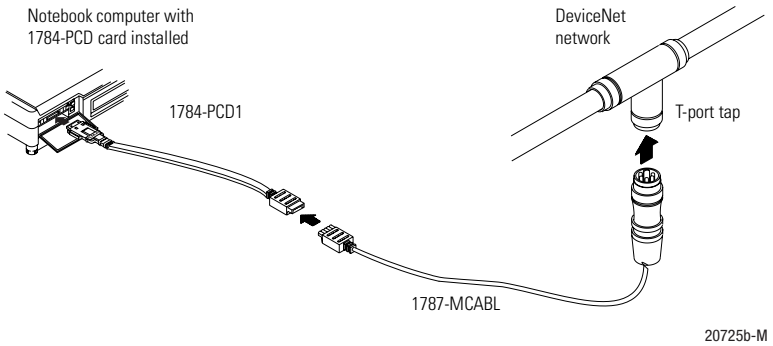
Connect the other end of the cable to the DeviceNet network in any of the following ways:

1. 1784-PCD to 1784-PCD1 to 1784-PCABL to DeviceNet



2. 1784-PCD to 1784-PCD1 to 1784-MCABL to DeviceNet



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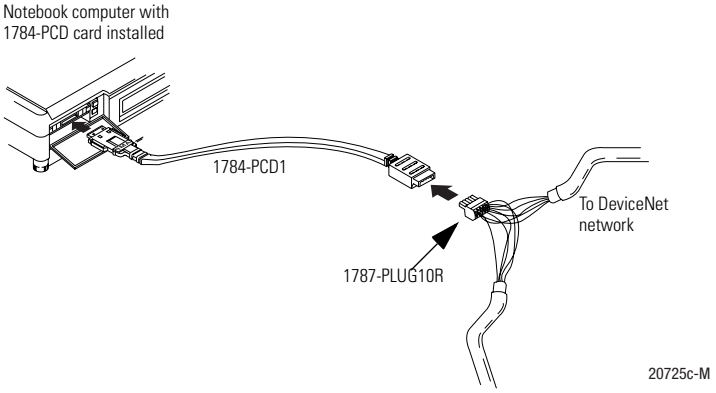
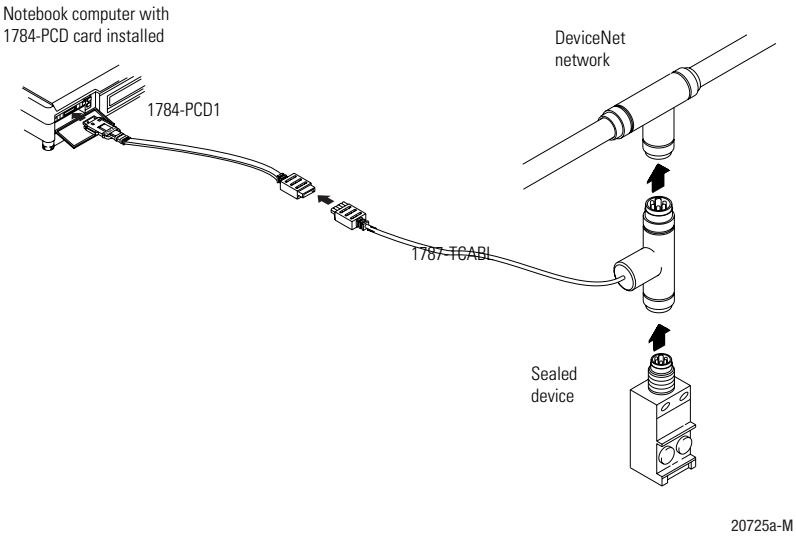
3. 1784-PCD to 1784-PCD1 to 5-pin linear plug to DeviceNet



4. 1784-PCD to 1784-PCD1 to 1784-TCABL to DeviceNet device



Related Publications

Title	Publication Number
DeviceNet 1784-PCD Communication Interface Card Data Sheet	NETS-SP007B-US-E
DeviceNet 1784-PCD Card Installation Instructions	1784-IN029C-EN-P

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Ordering Information

Follow the steps below to order the Card:

1. Order the Card with this catalog number:

Description	Catalog Number
DeviceNet 1784-PCD Communication Interface Card	1784-PCD

2. In addition to ordering your Card, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

DeviceNet 1784-PCID Communication Interface Card

With the Rockwell Automation DeviceNet 1784-PCID Communication Interface Card, you can link your application to any DeviceNet network with ease. Because this card uses the standard PCI bus found in the majority of computers manufactured today, you can use it with almost any computer. If you require general programming, configuration, and monitoring capabilities via an industrial workstation or desktop computer with a PCI bus architecture, this is the card for you.

DeviceNet CONFORMANCE TESTED

DeviceNet Features and Benefits

- support for explicit messaging
- faster startup due to Faulted Address Recovery
- support for all DeviceNet standard baud rates
- support for DeviceNet Passive and Test modes

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Product Features and Benefits

- a small size, PCI "short" card (much smaller than a half-size PCI card)
- a high-speed 40MHz AMD AM1186EM-40 processor
- a 128K RAM, 8K shared host memory interface
- DeviceNet connectivity for RSLinx and RSNetWorx for DeviceNet
- the ability to write your own data collection application in Visual Basic, C++, etc., using the RSLinx standard API
- easy FLASH upgrade for future enhancements
- the ability to link to OPC/DDE for process control
- drivers for Windows NT and Windows 2000
- support for autobaud and auto-search for vacant node address

DeviceNet Details

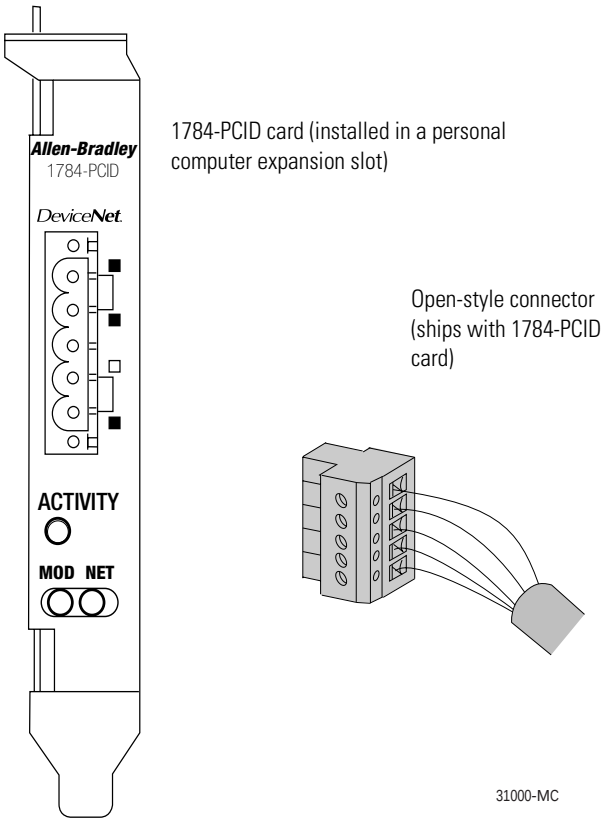
Feature	1784-PCID
Explicit Messaging	Yes
I/O Messaging	No
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb Yes
Master/Scanner	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 N/A N/A N/A N/A
Power Requirements PC DeviceNet	 5V @ 625 mA max 24V dc @ 90 mA max
I/O Data Size	N/A

Configuration Information

Configure	By using
Baud Rates, Node Addresses and Parameters	RSNetWorx for DeviceNet

Physical Connection

You need the following components to connect a 1784-PCID Card to a DeviceNet network.



Related Publications

Title	Publication Number
DeviceNet 1784-PCID Communication Interface Card Data Sheet	NETS-SP008B-US-E
DeviceNet PCI Communication Interface Card Installation Instructions	1784-IN004A-EN-P

Ordering Information

Follow the steps below to order the Card:

1. Order the card with this catalog number:

Description	Catalog Number
DeviceNet 1784-PCID Communication Interface Card	1784-PCID

2. In addition to ordering your Card, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

3. Record your selection in the bill of materials on page BOM-1.

DeviceNet 1770-KFD RS-232 Personal Computer Interface

The DeviceNet 1770-KFD RS-232 Personal Computer Interface lets you connect a PC-compatible laptop, desktop, or notebook computer to the DeviceNet network. Once connected, your computer is established as a node on the DeviceNet network.

Since the RS-232 Computer Interface is small and lightweight, you can carry it with your PC from network to network for troubleshooting and maintenance. You can also use it to establish a computer as a permanent node on the network.

DeviceNet Features and Benefits

- support for explicit messaging
- faster restart due to Faulted Address Recovery
- support for all DeviceNet standard baud rates

L

Product Features and Benefits

- supports point-to-point connection; this lets you define and download parameter and node configurations from a host computer
- operates on ac power or power from DeviceNet:
  - if you are using an ac power supply, the power supply also powers the DeviceNet network
  - if you are operating from DeviceNet power, an ac power supply for the 1770-KFD module is not required
- small and compact
- no mechanical switches for configuration
- can be mounted on a DIN rail anywhere within existing enclosures
- drivers for Windows 95/98/Me, Windows NT and Windows 2000
- DeviceNet connectivity for RSLinx and RSNetWorx for DeviceNet

DeviceNet Details

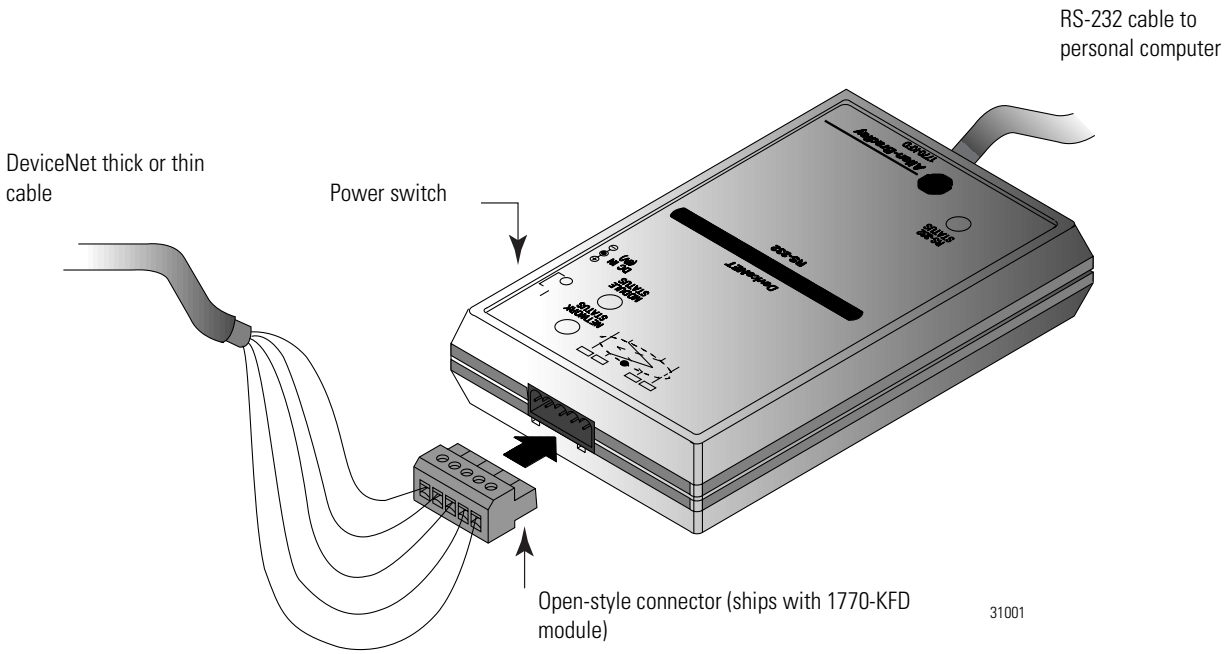
Feature	1770-KFD
Explicit Messaging	Yes
I/O Messaging	No
Faulted Address Recovery	Yes
Baud Rates Autobaud	125Kb, 250Kb, 500Kb No
Master/Scanner	No
I/O Messaging Change-of-State (COS) Polling Cyclic Bit Strobe	 N/A N/A N/A N/A
Power Requirements Outlet DeviceNet	 9V @ 1 A 11-25V @ 300-700 mA
I/O Data Size	N/A

Configuration Information

Configure	By using
Baud Rates, Node Addresses and Parameters	RSNetWorx for DeviceNet
Parameters	N/A

Physical Connection

You need the following components to connect an 1770-KFD Module to a DeviceNet network.



Related Publications

Title	Publication Number
DeviceNet RS-232 Interface Module Installation Instructions	1770-5.6

Ordering Information

Follow the steps below to order the Module:

1. Order the Module with this catalog number:

Description	Catalog Number
RS-232 Personal Computer Interface RS-232 Personal Computer Interface with Global 9V dc Power Supply Adapter	1770-KFD 1770-KFDG
U.S. 9V dc Power Supply Adapter	1787-USADPTR
Open-style, 5-pin Probe Cable, 2.5m (8 ft)	1787-PCABL
Sealed-style, T-style Cable, 2m (6 ft)	1787-TCABL
Sealed Mini-male Cable, 2 m (6 ft)	1787-MCABL

2. In addition to ordering your Module, order RSNetWorx for DeviceNet for configuration purposes.

Description	Catalog Number
RSNetWorx for DeviceNet	9357-DNETL3

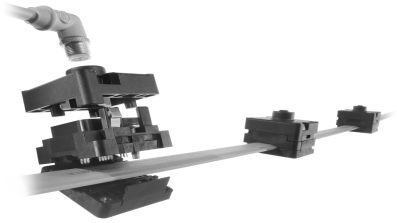
3. Record your selection in the bill of materials on page BOM-1.

Physical Media

Rockwell Automation offers a variety of DeviceNet physical media—all to meet your application needs. In addition to a wide selection, Rockwell's physical media can be installed without the need for conduit, reducing your installation costs.

- **Round Media** - offered in two types: thick and thin cable. Thick cable is used primarily as the trunk line on the DeviceNet network. Thin cable is most often used as the drop line connecting devices to the trunk line via taps, but it can also be used as the trunk line.

DeviceBox taps can be connected to round media for a direct connection to a trunk line.



- **Flat Media** - the KwikLink™ flat media system is a simple, modular cabling method designed to promote 50% savings in installation costs. This is accomplished through a drastic reduction in labor and materials.

- **DevicePort Taps** - can be connected to round or flat media for a direct connection to a trunk line.

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Round Media

Round Media comes in thick or thin cable types. Thick cable has a diameter of 12.2 mm (0.48 in) and is typically used as a trunk line. Thin cable has a diameter of 6.9mm (0.27 in) and can be used as a trunk line, but is also used as the drop line connecting devices to the network via taps. A CPE outer jacket provides greater chemical resistance.

DevicePort taps are multiport taps that connect to a round or flat media trunk line via drop cables. These taps connect as many as eight devices to the network through mini or micro quick disconnects.

DeviceBox taps use round media only for a direct connection to a trunk line. They provide terminal strip connections for as many as eight nodes using thin cable drop lines. Removable gasket covers and cable glands provide a tight, sealed box that you can mount on a machine.

Pre-terminated cable for use with ArmorBlock I/O blocks is also available. These cordsets provide connections to both I/O and power, and are available in a variety of lengths and connection configurations. See section D for information on ArmorBlock I/O and accessories.

DeviceNet Features and Benefits

- field-installable connectors to let you create your own cable sets at the length you desire
- IP67 rating
- variety of pre-terminated lengths to fit your application needs
- custom pre-terminated lengths available
- stainless steel connectors available for food and beverage applications
- UL listed and CSA certified
- raw cable spools from 50m to 600m lengths
- cable jacket material: yellow CPE (thin) or gray PVC (thick)
- maximum current per NEC Class 2 specifications: 3 amps (thin) or 4 amps (thick)

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DeviceNet Current Ratings

	Thick	Thin
Current Rating	8.0 A (NEC 4.0 A)	3.0 A

Related Publications

Title	Publication Number
DeviceNet Cable System Planning and Installation Manual	DN-6.7.2
DeviceNet Media System Component List	DN-2.1
DeviceNet Sealed Physical Media Bulletin 1485 Product Profile	DN-1.8
DeviceNet Media Catalog Guide	1485-CG001A-EN-P

Ordering Information: Thick and Thin Cable Spools

Description	Catalog Number
Thick Cable: 50m (164 ft)	1485C-P1-A50
Thick Cable: 150m (492 ft)	1485C-P1-A150
Thick Cable: 300m (984 ft)	1485C-P1-A300
Thick Cable: 500m (1640 ft)	1485C-P1-A500
Thin Cable: 50m (164 ft)	1485C-P1-C50
Thin Cable: 150m (492 ft)	1485C-P1-C150
Thin Cable: 300m (984 ft)	1485C-P1-C300
Thin Cable: 500m (1640 ft)	1485C-P1-C500
Thin Cable, 600m (1968 ft)	1485C-P1-C600

Ordering Information: Pre-terminated Thick Cable Cordsets, Patchcords and Receptacles

Description	Catalog Number
Mini to Mini:	
Straight Mini Male to Straight Mini Female: 0.3m (1.0ft)	1485C-P1FN5-M5
Straight Mini Male to Straight Mini Female: 1m (3.3ft)	1485C-P1N5-M5
Straight Mini Male to Straight Mini Female: 2m (6.5ft)	1485C-P2N5-M5
Straight Mini Male to Straight Mini Female: 3m (9.4ft)	1485C-P3N5-M5
Straight Mini Male to Straight Mini Female: 4m (13.1ft)	1485C-P4N5-M5
Straight Mini Male to Straight Mini Female: 5m (16.1ft)	1485C-P5N5-M5
Straight Mini Male to Straight Mini Female: 6m (19.8ft)	1485C-P6N5-M5
Straight Mini Male to Straight Mini Female: 7m (22.9ft)	1485C-P7N5-M5
Straight Mini Male to Straight Mini Female: 8m (26.2ft)	1485C-P8N5-M5
Straight Mini Male to Straight Mini Female: 9m (29.5ft)	1485C-P9N5-M5
Straight Mini Male to Straight Mini Female: 10m (32.81ft)	1485C-P10N5-M5
Straight Mini Male to Straight Mini Female: 12m (39.4ft)	1485C-P12N5-M5
Straight Mini Male to Straight Mini Female: 18m (59.0ft)	1485C-P18N5-M5
Straight Mini Male to Straight Mini Female: 24m (78.7ft)	1485C-P24N5-M5
Straight Mini Male to Straight Mini Female: 30m (98.4ft)	1485C-P30N5-M5
Mini to Conductor:	
Straight Mini Male to Conductor: 1m (3.3ft)	1485C-P1M5-C
Straight Mini Male to Conductor: 2m (6.5ft)	1485C-P2M5-C
Straight Mini Male to Conductor: 3m (9.8ft)	1485C-P3M5-C
Straight Mini Male to Conductor: 4m (13.1ft)	1485C-P4M5-C
Straight Mini Male to Conductor: 5m (16.4ft)	1485C-P5M5C
Straight Mini Male to Conductor: 6m (19.7ft)	1485C-P6M5-C
Straight Mini Male to Conductor: 7m (22.9ft)	1485C-P7M5-C
Straight Mini Male to Conductor: 8m (26.2ft)	1485C-P8M5C
Straight Mini Male to Conductor: 9m (29.5ft)	1485C-P9M5C
Straight Mini Male to Conductor: 10m (32.8ft)	1485C-P10M5C
Straight Mini Male to Conductor: 12m (39.4ft)	1485C-P12M5-C
Straight Mini Male to Conductor: 18m (59.0ft)	1485C-P18M5-C

Description	Catalog Number
Straight Mini Male to Conductor: 24m (78.7ft)	1485C-P24M5-C
Straight Mini Male to Conductor: 30m (98.4ft)	1485C-P30M5-C
Straight Mini Female to Conductor: 1m (3.3ft)	1485C-P1N5-C
Straight Mini Female to Conductor: 2m (6.5ft)	1485C-P2N5-C
Straight Mini Female to Conductor: 3m (9.8ft)	1485C-P3N5-C
Straight Mini Female to Conductor: 4m (13.1ft)	1485C-P4N5-C
Straight Mini Female to Conductor: 5m (16.4ft)	1485C-P5N5-C
Straight Mini Female to Conductor: 6m (19.7ft)	1485C-P6N5-C
Straight Mini Female to Conductor: 7m (22.9ft)	1485C-P7N5-C
Straight Mini Female to Conductor: 8m (26.2ft)	1485C-P8N5-C
Straight Mini Female to Conductor: 9m (29.5ft)	1485C-P9N5-C
Straight Mini Female to Conductor: 10m (32.8ft)	1485C-P10N5-C
Straight Mini Female to Conductor: 12m (39.4ft)	1485C-P12N5-C
Straight Mini Female to Conductor: 18m (59.0ft)	1485C-P18N5-C
Straight Mini Female to Conductor: 24m (78.7ft)	1485C-P24N5-C
Straight Mini Female to Conductor: 30m (98.4ft)	1485C-P30N5-C
Receptacle to Conductor:	
Mini Male Receptacle to Conductor: 1m (3.3ft)	1485F-P1M5-A
Mini Male Receptacle to Conductor: 3m (9.8ft)	1485F-P3M5-A
Mini Male Receptacle to Conductor: 5m (16.4ft)	1485F-P5M5-A
Mini Female Receptacle to Conductor: 1m (3.3ft)	1485F-P1N5-A
Mini Female Receptacle to Conductor: 3m (9.8ft)	1485F-P3N5-A
Mini Female Receptacle to Conductor: 5m (16.4ft)	1485F-P5N5-A
Field Attachable Connectors:	
Mini Male 5-pin Straight Terminal Chamber, Thick Cable	871A-TS5-NM3
Mini Female 5-pin Straight Terminal Chamber, Thick Cable	871A-TS5-N3

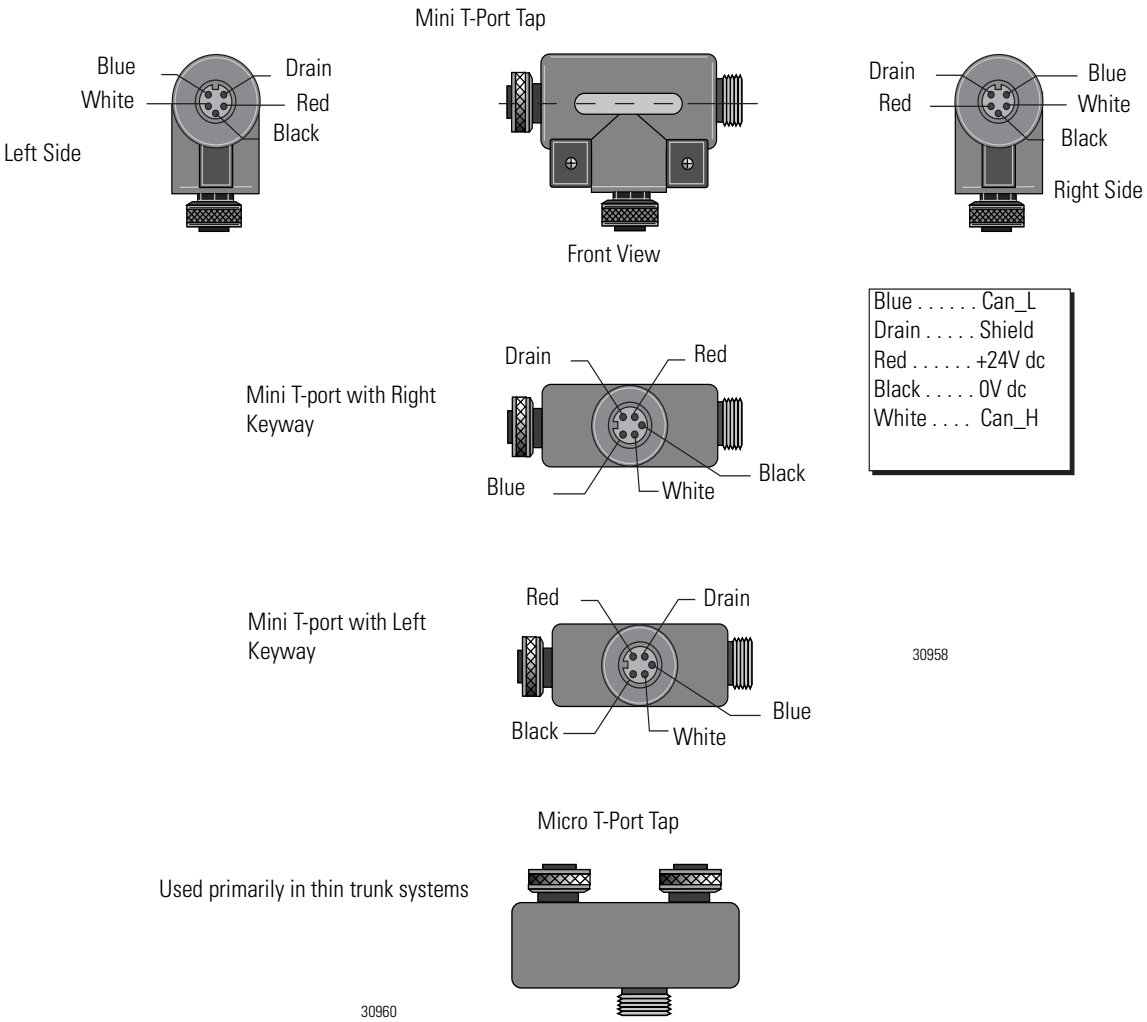
Ordering Information: Pre-terminated Thin Cable Cordsets/Patchcords

Description	Catalog Number
Mini to Mini:	
Straight Mini Male to Straight Mini Female: 1m (3.3ft)	1485R-P1N5-M5
Straight Mini Male to Straight Mini Female: 2m (6.5ft)	1485R-P2N5-M5
Straight Mini Male to Straight Mini Female: 3m (9.8ft)	1485R-P3N5-M5
Straight Mini Male to Straight Mini Female: 4m (13.1ft)	1485R-P4N5-M5
Straight Mini Male to Straight Mini Female: 5m (16.4ft)	1485R-P5N5-M5
Straight Mini Male to Straight Mini Female: 6m (19.8ft)	1485R-P6N5-M5
Mini to Micro/Micro to Mini:	
Straight Mini Male to Straight Micro Female: 1m (3.3ft)	1485R-P1M5-R5
Straight Mini Male to Straight Micro Female: 2m (6.5ft)	1485R-P2M5-R5
Straight Mini Male to Straight Micro Female: 3m (9.8ft)	1485R-P3M5-R5
Straight Mini Male to Straight Micro Female: 4m (13.1ft)	1485R-P4M5-R5
Straight Mini Male to Straight Micro Female: 5m (16.4ft)	1485R-P5M5-R5
Straight Mini Male to Straight Micro Female: 6m (19.8ft)	1485R-P6M5-R5
Right Angle Micro Male to Straight Mini Female: 1m (3.3ft)	1485R-P1N5-F5
Right Angle Micro Male to Straight Mini Female: 2m (6.5ft)	1485R-P2N5-F5
Right Angle Micro Male to Straight Mini Female: 3m (9.8ft)	1485R-P3N5-F5
Right Angle Micro Male to Straight Mini Female: 4m (13.1ft)	1485R-P4N5-F5
Right Angle Micro Male to Straight Mini Female: 5m (16.4ft)	1485R-P5N5-F5
Right Angle Micro Male to Straight Mini Female: 6m (19.8ft)	1485R-P6N5-F5
Mini to Conductor:	
Straight Mini Male to Conductor: 1m (3.3ft)	1485R-P1M5-C
Straight Mini Male to Conductor: 2m (6.5ft)	1485R-P2M5-C
Straight Mini Male to Conductor: 3m (9.8ft)	1485R-P3M5-C
Straight Mini Male to Conductor: 4m (13.1ft)	1485R-P4M5-C
Straight Mini Male to Conductor: 5m (16.4ft)	1485R-P5M5-C
Straight Mini Male to Conductor: 6m (19.8ft)	1485R-P6M5-C
Conductor to Straight Mini Female: 1m (3.3ft)	1485R-P1N5-C
Conductor to Straight Mini Female: 2m (6.5ft)	1485R-P2N5-C
Conductor to Straight Mini Female: 3m (9.8ft)	1485R-P3N5-C

Description	Catalog Number
Conductor to Straight Mini Female: 4m (13.1ft)	1485R-P4N5-C
Conductor to Straight Mini Female: 5m (16.4ft)	1485R-P5N5-C
Conductor to Straight Mini Female: 6m (19.8ft)	1485R-P6N5-C
Micro to Micro:	
Straight Micro Male to Straight Micro Female: 1m (3.3ft)	1485R-P1R5-D5
Straight Micro Male to Straight Micro Female: 2m (6.5ft)	1485R-P2R5-D5
Straight Micro Male to Straight Micro Female: 3m (9.8ft)	1485R-P3R5-D5
Straight Micro Male to Straight Micro Female: 4m (13.1ft)	1485R-P4R5-D5
Straight Micro Male to Straight Micro Female: 5m (16.4ft)	1485R-P5R5-D5
Straight Micro Male to Straight Micro Female: 6m (13.1ft)	1485R-P6R5-D5
Right Angle Micro Male to Straight Micro Female: 1m (3.3ft)	1485R-P1R5-F5
Right Angle Micro Male to Straight Micro Female: 2m (6.5ft)	1485R-P2R5-F5
Right Angle Micro Male to Straight Micro Female: 3m (9.8ft)	1485R-P3R5-F5
Right Angle Micro Male to Straight Micro Female: 4m (13.1ft)	1485R-P4R5-F5
Right Angle Micro Male to Straight Micro Female: 5m (16.4ft)	1485R-P5R5-F5
Right Angle Micro Male to Straight Micro Female: 6m (19.8ft)	1485R-P6R5-F5
Micro to Conductor:	
Straight Micro Male to Conductor: 1m (3.3ft)	1485R-P1D5-C
Straight Micro Male to Conductor: 2m (6.5ft)	1485R-P2D5-C
Straight Micro Male to Conductor: 3m (9.8ft)	1485R-P3D5-C
Straight Micro Male to Conductor: 4m (13.1ft)	1485R-P4D5-C
Straight Micro Male to Conductor: 5m (16.4ft)	1485R-P5D5-C
Straight Micro Male to Conductor: 6m (19.8ft)	1485R-P6D5-C
Right Angle Micro Male to Conductor: 1m (3.3ft)	1485R-P1F5-C
Right Angle Micro Male to Conductor: 2m (6.5ft)	1485R-P2F5-C
Right Angle Micro Male to Conductor: 3m (9.8ft)	1485R-P3F5-C
Right Angle Micro Male to Conductor: 4m (13.1ft)	1485R-P4F5-C
Right Angle Micro Male to Conductor: 5m (16.4ft)	1485R-P5F5-C
Right Angle Micro Male to Conductor: 6m (19.8ft)	1485R-P6F5-C
Conductor to Straight Micro Female: 1m (3.3ft)	1485R-P1R5-C

Description	Catalog Number
Conductor to Straight Micro Female: 2m (6.5ft)	1485R-P2R5-C
Conductor to Straight Micro Female: 3m (9.8ft)	1485R-P3R5-C
Conductor to Straight Micro Female: 4m (13.1ft)	1485R-P4R5-C
Conductor to Straight Micro Female: 5m (16.4ft)	1485R-P5R5-C
Conductor to Straight Micro Female: 6m (19.8ft)	1485R-P6R5-C
Conductor to Right Angle Micro Female: 1m (3.3ft)	1485R-P1V5-C
Conductor to Right Angle Micro Female: 2m (6.5ft)	1485R-P2V5-C
Conductor to Right Angle Micro Female: 3m (9.8ft)	1485R-P3V5-C
Conductor to Right Angle Micro Female: 4m (13.1ft)	1485R-P4V5-C
Conductor to Right Angle Micro Female: 5m (16.4ft)	1485R-P5V5-C
Conductor to Right Angle Micro Female: 6m (19.8ft)	1485R-P6V5-C
Receptacles to Conductor:	
Mini Male Receptacle to Conductor: 1m (3.3ft)	1485F-P1M5-C
Mini Female Receptacle to Conductor: 1m (3.3ft)	1485F-P1N5-C
Micro Male Receptacle to Conductor: 1m (3.3ft)	1485-P1D5-C
Micro Female Receptacle to Conductor: 1m (3.3ft)	1485F-P1R5-C
Field Attachable Connectors:	
Mini Male 5-pin Straight Terminal Chamber, Thin Cable	871A-TS5-NM1
Mini Female 5-pin Straight Terminal Chamber, Thin Cable	871A-TS5-N1
Micro Male 5-pin Straight Terminal Chamber, Thin Cable	871A-TS5-DM1
Micro Female 5-pin Straight Terminal Chamber, Thin Cable	871A-TS5-D1

Ordering Information: T-Port Tap



Description	Catalog Number
Mini T-Port Tap with Right Keyway	1485P-P1N5-MN5R1
Mini T-Port Tap with Left Keyway	1485P-P1N5-MN5L1
Mini T-port Tap with Micro Drop Connector	1485P-P1R5-MN5R1
Micro T-Port Tap	1485P-P1R5-DR5

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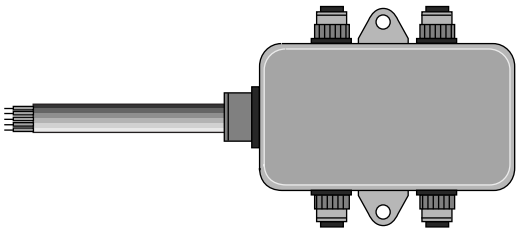
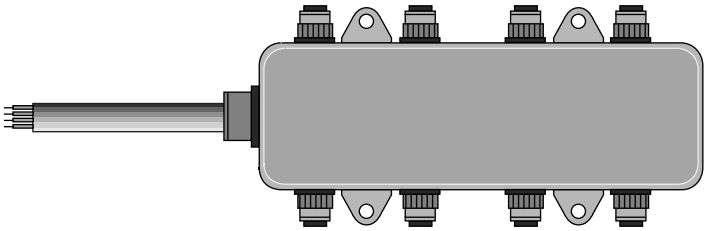
Ordering Information: DevicePort Taps



4-Port Micro DevicePort Tap with 2 m Drop Line



8-Port Micro DevicePort Tap with
2 m Drop Line

Description	Catalog Number
4-port Micro DevicePort Tap with 2m Drop Line	1485P-P4R5-C2
4-port Micro DevicePort Tap with 2m Mini-male Connector	1485P-P4R5-C2-M5
8-port Micro DevicePort Tap with 2m Drop Line	1485P-P8R5-C2
8-port Micro DevicePort Tap with 2m Mini-male Connector	1485P-P8R5-C2-M5
4-port Micro DevicePort Tap with Micro-male Connector	1485P-P4R5-D5
8-port Micro DevicePort Tap with Micro-male Connector	1485P-P8R5-D5
4-port Mini DevicePort Tap with Mini-male Connector	1485P-P4N5-M5
8-port Mini DevicePort Tap with Mini-male Connector	1485P-P8N5-M5

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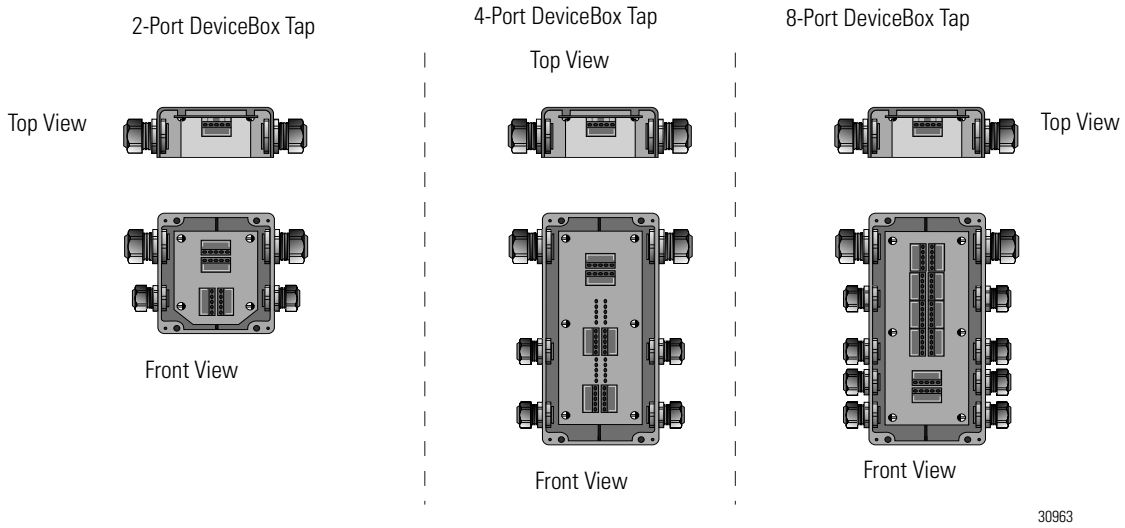
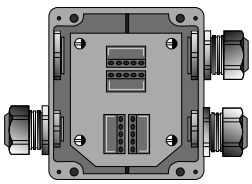
Ordering Information: DeviceBox™ Taps

Order DeviceBox taps according to the trunk type you are using (thick or thin).



Description	Catalog Number
2-port DeviceBox Tap (Thick Trunk)	1485P-P2T5-T5
2-port DeviceBox Tap (Thin Trunk)	1485P-P2T5-T5C
4-port DeviceBox Tap (Thick Trunk)	1485P-P4T5-T5
4-port DeviceBox Tap (Thin Trunk)	1485P-P4T5-T5C
8-port DeviceBox Tap (Thick Trunk)	1485P-P8T5-T5
8-port DeviceBox Tap (Thin Trunk)	1485P-P8T5-T5C
DeviceBox Accessory Kit	1485A-AccKit

Ordering Information: PowerTap™ Tap



Description	Catalog Number
PowerTap Sealed (Thick)	1485T-P2T5-T5
PowerTap Sealed (Thin)	1485T-P2T5-T5C

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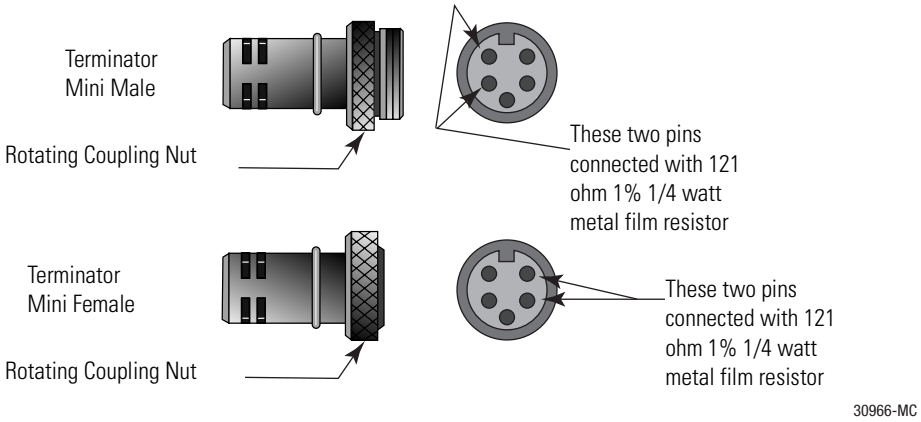
Ordering Information: Sealed-Style Terminators



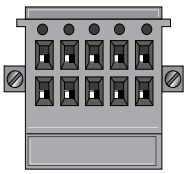
Description	Catalog Number
Terminator Mini-male	1485A-T1M5
Terminator Mini-female	1485A-T1N5

Ordering Information: Open-Style Terminators

Description	Catalog Number
Open-style Terminator	1485A-C2

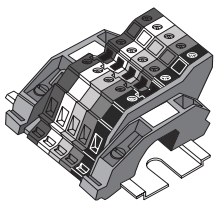
Ordering Information: Open-Style Linear Plug

Description	Catalog Number
Open-style Linear Plug (package of 10)	1787-PLUG10R



Ordering Information: Open-Style Connector Tap

Description	Catalog Number
5-point Open-style Connector Tap	1492-DN3TW



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Flat Media

The KwikLink™ flat media system provides a simple, modular cabling method with its flat 4-wire cable and Insulation Displacement Connectors (IDCs). Designed to promote 50% savings in installation costs by offering a drastic reduction in labor and materials, the KwikLink system allows nodes to be added to the network quickly and easily—without severing the trunk line. Cutting or stripping the trunk line is eliminated, as is the need for predetermined cable lengths. KwikLink offers maximum simplicity while still supporting 64 nodes.

KwikLink flat cable is easy to mount and is physically keyed to prevent incorrect wiring. There are three pieces to each connection: flat cable, a hinged tap, and an interface module, which includes a choice of a sealed or unsealed micro QD and terminator as well as open-style terminal connection. Class 1 pigtail drops and splice kits for joining two flat media segments are also available.

Insulation Displacement Connectors interface drop cables to the flat cable trunkline with optimal plug-and-play capability at minimal cost. The hinged 2-piece base snaps snugly around the flat cable at any point along the trunk. Contact is made with the cable's four conductors by tightening two screws that drive the contacts through the cable jacket and into the conductors.

Drop cables have been designed for the most common connection configurations. All trunk line connections are 90º micro males with 4-wire unshielded cable. Device connection options include 5-pin mini and micro as well as flying leads (open-style).

ArmorBlock MaXum I/O on DeviceNet takes advantage of the KwikLink system. The entire ArmorBlock MaXum system is rated IP67 and NEMA 4X, allowing you to reduce or eliminate the number of enclosures or trays necessary to protect either the media or the block. ArmorBlock MaXum interfaces directly to KwikLink flat cable, eliminating the need for external taps.

Cable Ratings

KwikLink cable is designed with rough industrial conditions and outdoor use in mind

Class 1 (CL1 Cable) - Class 1 KwikLink cable, UL listed for 600V and 8A at 24V dc. Jacket material is TPE for optimal chemical resilience and superior protection in harsh environments; maximum toughness with excellent flexibility. Cable color is medium grey.

Class 2 (CL2 Cable) - Class 2 KwikLink cable adheres to NEC Article 725 which states that for a Class 2 circuit, the power source must have a rated output of less than 30V and 100VA. This translates to 4A at 24V dc. Jacket

material is PVC, providing even greater flexibility than Class 1 cable. Cable color is light grey.

Auxiliary Power Cable (CL1 Cable) - KwikLink Auxiliary Power cable is designed for running auxiliary power to output devices on a KwikLink system. KwikLink power cable is a Class 1 cable capable of supplying 24V of output power with currents up to 8A. Cable color is black.

Product Features and Benefits

- lowest cost DeviceNet media option
- insulation displacement connectors that eliminate the need to cut or strip cable to make a secure connection
- unsealed connections have an IP60 (NEMA 1) enclosure rating
- sealed connectors feature IP67, NEMA 6P, and NEMA 13 enclosure ratings
- sealed connectors have a 1,200 psi (8270kPa) washdown protection rating
- modular design that allows you greater node placement flexibility
- inherent noise resistance due to the low loss, low capacitance, well balanced KwikLink cable and DeviceNet's differential type of transmission

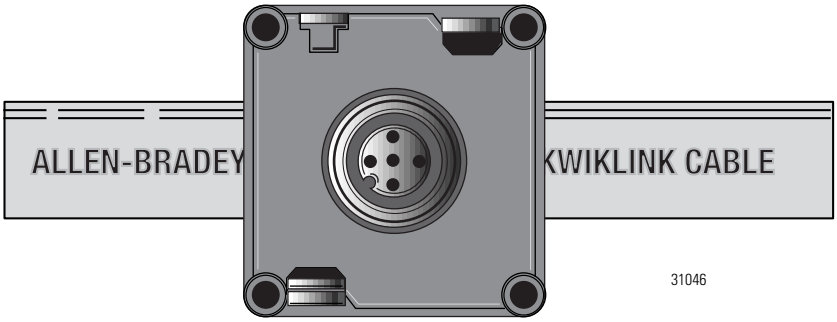
DeviceNet Current Rating

	NEC Class 1	NEC Class 2	Power Cable
Current Rating	8 A	4 A	8 A

Related Publications

Title	Publication Number
DeviceNet Cable System Planning and Installation Guide	DN-6.7.2
DeviceNet Media Catalog Guide	1485-CG001A-EN-P
KwikLink Radiated Immunity Testing	1485-WP001A-US-P

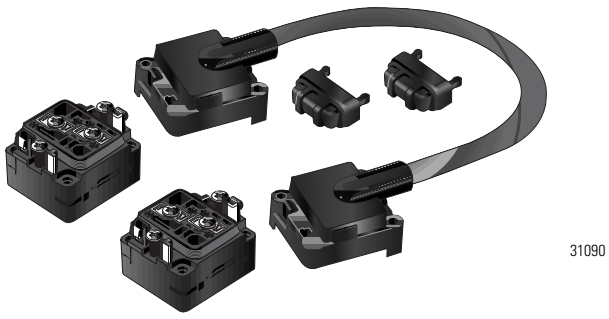
Ordering Information: Flat Cable



Spool Size (meters)	Class 1 Cat. No.	Class 2 Cat. No.	Power Cable Cat. No.
75	1485C-P1E75	1485C-P1G75	1485-P1L75
200	1485C-P1E200	1485C-P1G200	1485-P1L200
420	1485C-P1E420	1485C-P1G420	1485-P1L420

Ordering Information: Splice Kits

Description	Catalog Number
NEMA 1, IP60 Splice Kit with 2 Bases and 2 End Caps	1485P-P1H4-S
NEMA 6P and 13, IP67 Splice Kit with 2 Bases and 2 End Caps	1485P-P1E4-S
NEMA 1, IP60 Power Isolation Splice Kit with 2 Bases and 2 End Caps	1485P-P1H4-SX
NEMA 6P and 13, IP67 Power Isolation Splice Kit with 2 Bases and 2 End Caps	1485P-P1E4-SX



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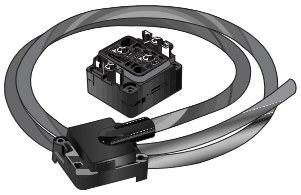
Ordering Information: Pigtail Insulation Displacement Connectors



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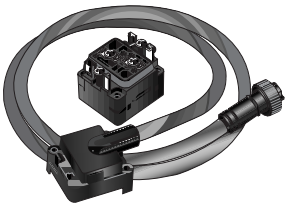

31088

Description	Catalog Number
NEMA 1, IP60 Class 1 Cable Drop with Base (No Gaskets), 1m	1485T-P1H4-B1
NEMA 1, IP60 Class 1 Cable Drop with Base No Gaskets), 2m	1485T-P1H4-B2
NEMA 1, IP60 Class 1 Cable Drop with Base (No Gaskets), 3m	1485T-P1H4-B3
NEMA 1, IP60 Class 1 Cable Drop with Base (No Gaskets), 6m	1485T-P1H4-B6
NEMA 6P & 13, IP67 Class 1 Cable Drop with Base, 1m	1485T-P1E4-B1
NEMA 6P & 13, IP67 Class 1 Cable Drop with Base, 2m	1485T-P1E4-B2
NEMA 6P & 13, IP67 Class 1 Cable Drop with Base, 3m	1485T-P1E4-B3
NEMA 6P & 13, IP67 Class 1 Cable Drop with Base, 6m	1485T-P1E4-B6
NEMA1, IP60 Class 1 Mini-pigtail Drop with Base (No Gaskets), 1m	1485P-P1H4-B1-N5
NEMA1, IP60 Class 1 Mini-pigtail Drop with Base (No Gaskets), 2m	1485P-P1H4-B2-N5
NEMA1, IP60 Class 1 Mini-pigtail Drop with Base (No Gaskets), 3m	1485P-P1H4-B3-N5
NEMA1, IP60 Class 1 Mini-pigtail Drop with Base (No Gaskets), 6m	1485P-P1H4-B6-N5
NEMA 6P & 13, IP67 Class 1 Mini-pigtail Drop with Base, 1m	1485P-P1E4-B1-N5
NEMA 6P & 13, IP67 Class 1 Mini-pigtail Drop with Base, 2m	1485P-P1E4-B2-N5
NEMA 6P & 13, IP67 Class 1 Mini-pigtail Drop with Base, 3m	1485P-P1E4-B3-N5
NEMA 6P & 13, IP67 Class 1 Mini-pigtail Drop with Base, 6m	1485P-P1E4-B6-N5

Ordering Information: Insulation Displacement Connectors

31086

Description	Catalog Number
NEMA 6P and 13, IP67 Micro Module with Base	1485P-P1E4-R5
NEMA 1, IP60 Micro Module with Base (No Gaskets)	1485P-P1H4-R5
Open-style Module with Base (No Gaskets)	1485P-P1H4-T4

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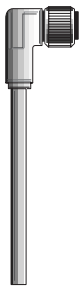
Ordering Information: Terminator Insulation Displacement Connectors

31087

Description	Catalog Number
NEMA 6P and 13, IP67 Terminator with Base	1485A-T1E4
NEMA 1, IP60 Terminator with Base (No Gaskets)	1485A-T1H4

Ordering Information: KwikLink Drop Cables

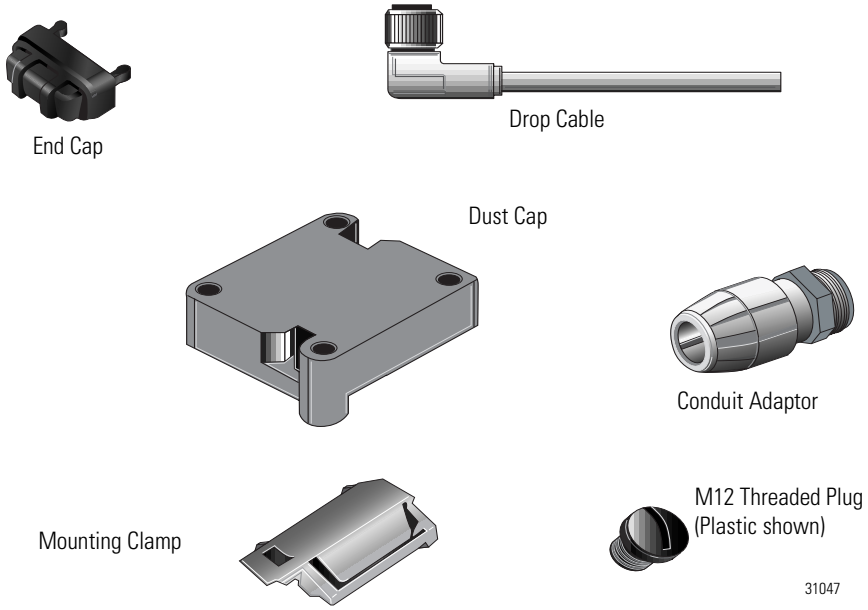
IMPORTANT Flat media drop cables are not to be used with round media.



Description	Catalog Number
Right Angle Micro-male to Conductor: 1m (3.3ft)	1485K-P1F5-C
Right Angle Micro-male to Conductor: 2m (6.5ft)	1485K-P2F5-C
Right Angle Micro-male to Conductor: 4m (13.1ft)	1485K-P4F5-C
Right Angle Micro-male to Conductor: 6m (19.7ft)	1485K-P6F5-C
Right Angle Micro-male to Straight Mini-female: 1m (3.3ft)	1485K-P1F5-N5
Right Angle Micro-male to Straight Mini-female: 2m (6.5ft)	1485K-P2F5-N5
Right Angle Micro-male to Straight Mini-female: 3m (9.8ft)	1485K-P3F5-N5
Right Angle Micro-male to Straight Mini-female: 4m (13.1ft)4	1485K-P4F5-N5
Right Angle Micro-male to Straight Mini-female: 5m (16.4ft)	1485K-P5F5-N5
Right Angle Micro-male to Straight Mini-female: 6m (19.7ft)	1485K-P6F5-N5
Right Angle Micro-male 4-pin to Right Angle Mini-female 4-pin 1m (3.3ft)	1485K-P1F5-Z5
Right Angle Micro-male 4-pin to Right Angle Mini-female 4-pin 2m (6.5ft)	1485K-P2F5-Z5
Right Angle Micro-male 4-pin to Right Angle Mini-female 4-pin 3m (9.8ft)	1485K-P3F5-Z5
Right Angle Micro-male to Right Angle Mini-female 4m (13.1ft)	1485K-P4F5-Z5
Right Angle Micro-male to Right Angle Mini-female 5m (16.4ft)	1485K-P5F5-Z5
Right Angle Micro-male to Right Angle Mini-female 6m (19.7ft)	1485K-P6F5-Z5
Right Angle Micro-male 4-pin to Straight Micro-female 4-pin 1m (3.3ft)	1485K-P1F5-R5
Right Angle Micro-male 4-pin to Straight Micro-female 4-pin 2m (6.5ft)	1485K-P2F5-R5
Right Angle Micro-male 4-pin to Straight Micro-female 4-pin 3m (9.8ft)	1485K-P3F5-R5
Right Angle Micro-male 4-pin to Straight Micro-female 4-pin 4m (13.1ft)	1485K-P4F5-R5
Right Angle Micro-male to Straight Micro-female 5m (16.4ft)	1485K-P5F5-R5
Right Angle Micro-male 4-pin to Right Angle Micro-female 4-pin 6m (19.7ft)	1485K-P6F5-R5
Right Angle Micro-male 4-pin to Right Angle Micro-female 4-pin 1m (3.3ft)	1485K-P1F5-V5
Right Angle Micro-male 4-pin to Right Angle Micro-female 4-pin 2m (6.5ft)	1485K-P2F5-V5
Right Angle Micro-male 4-pin to Right Angle Micro-female 4-pin 3m (9.8ft)	1485K-P3F5-V5
Right Angle Micro-male 4-pin to Right Angle Micro-female 4-pin 4m (13.1ft)	1485K-P4F5-V5
Right Angle Micro-male to Right Angle Micro-female 5m (16.4ft)	1485K-P5F5-V5
Right Angle Micro-male 4-pin to Right Angle Micro-female 4-pin 6m (19.7ft)	1485K-P6F5-V5

Description	Catalog Number
Straight Micro-male 4-pin to Straight Micro-male 4-pin 0.3m (1.0ft)	1485K-P1FD5-D5

Ordering Information: Flat Media System Accessories



Description	Catalog Number
KwikLink Module Dust Cap	1485A-C5E4
Conduit Adapter	1485A-CAD
Flat Cable Mounting Clamp	1485A-FCM
Threaded Plug, Plastic (M12)	1485A-M12
Threaded Plug, Aluminum (M12)	1485A-C3
Cable End Cap	1485A-CAP
Drop Cable	see table on page 17

M

Master Bill of Materials

Use this table to create a list of materials you need to build your network.

ATTENTION

Please note any extra components needed for each item placed on this list. For example, when choosing a PC Interface, you need configuration software. Refer to the appropriate product page within this guide to determine any extra materials.

Catalog Number	Description	Qty	DeviceNet Current Draw
	Control Platform:		
	Controller Type:		
	PLC/SLC/Logix-based Controller		
	PC-based Controller		
	Network Interface:		
	PC Interface		
	Operator Interface		
9357-DNetL3	**Configuration Software: RSNetWorx for DeviceNet**		
	I/O:		
	Packaged I/O		
	Modular I/O		
	Sensors:		
	Operator Interfaces:		

Catalog Number	Description	Qty	DeviceNet Current Draw
	Motion Control:		
	Drives:		
		Total Draw	

	Media Types:		

Numerics

A

B

C

D

E

F

I

K

M

N

O

P

R

S

T

U

Notes:

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