Allen-Bradley

DeviceNet™ Push Button Stations with DeviceLogix™ Component Technology

Bulletin 800E

User Manual

Rockwell Automation

File Name: AB_PBStations_800E_bulletin_D201

Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of this control equipment must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes and standards.

The illustrations, charts, sample programs and layout examples shown in this guide are intended solely for purposes of example. Since there are many variables and requirements associated with any particular installation, Allen-Bradley does not assume responsibility or liability (to include intellectual property liability) for actual use based upon the examples shown in this publication.

Allen-Bradley Publication SGI-1.1, *Safety Guidelines for the Application, Installation and Maintenance of Solid-State Control* (available from your local Allen-Bradley office), describes some important differences between solid-state equipment and electromechanical devices that should be taken into consideration when applying products such as those described in this publication.

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Throughout this manual we use notes to make you aware of safety considerations:

ATTENTION 	Identifies information about practices or circumstances that can lead to personal injury or death, property damage or economic loss

Attention statements help you to:

- identify a hazard
- avoid a hazard
- recognize the consequences

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

Allen-Bradley, RSNetWorx, DeviceLogix, PLC, and SLC are registered trademarks of Rockwell Automation

DeviceNet is a trademark of the Open DeviceNet Vendor Association (ODVA).

European Communities (EC) Directive Compliance

This product has the CE mark and is approved for installation within the European Union and EEA regions. It has been designed and tested to meet the following directives.

EMC Directive

This product is tested to meet the Council Directive 89/336/EC Electromagnetic Compatibility (EMC) by applying the following standards, in whole or in part, documented in a technical construction file:

- EN 50081-2 EMC — Generic Emission Standard, Part 2 — Industrial Environment
- EN 50082-2 EMC — Generic Immunity Standard, Part 2 — Industrial Environment

This product is intended for use in an industrial environment.

Low Voltage Directive

This product is not required to meet Council Directive 73/23/EEC Low Voltage, as it is designed for use with a voltage rating below 50V for alternating current and below 75V for direct current. The requirements of EN 60947-5-1:1997 Low-Voltage Switchgear and Controlgear, Part 5 — Control Circuit Devices, have been applied.

Preface

Chapter 1 — Overview of DeviceNet Push Button Stations

Chapter 2 — Quick Start

Chapter 3 — Installation and Mounting

Chapter 4 — Operations

Chapter 5 — Troubleshooting and Maintenance

Chapter 6 — DeviceLogix

Chapter 7 — Off-Line Node Recovery

Appendix A — Specifications

Appendix B — Cat. No. Explanation

Appendix C — DeviceNet Information

The purpose of this manual is to provide you with the necessary information to apply the Bulletin 800E DeviceNet Push Button Station with DeviceLogix Component Technology. Described in this manual are methods for installing, configuring, and troubleshooting the Bulletin 800E DeviceNet Push Button Station.

ATTENTION

Read this manual in its entirety before installing, operating, servicing, or configuring the Bulletin 800E DeviceNet Push Button Station.

Intended Audience

This manual is intended for qualified personnel responsible for the setup and service of these devices. You must have previous experience with and a basic understanding of communications terminology, configuration procedures, required equipment, and safety precautions.

You should understand the DeviceNet network operations, including how slave devices operate on the network and communicate with a DeviceNet master.

You should be familiar with the use of the RSNetWorx for DeviceNet Software (Cat. No. 9357-DNETL3) for network configuration. This software package is referred to often in this manual.

ATTENTION

- Read the DeviceNet Cable System Planning and Installation Manual, Publication 1485-6.7.1, in its entirety before planning and installing a DeviceNet System. If the network is not installed according to this document, unexpected operation and intermittent failures can occur.

  If this manual is not available, consult your local Allen-Bradley Authorized Distributor or Sales Office to request a copy. Copies may also be ordered from the Rockwell Automation Bookstore, The bookstore can be contacted via the Internet from the Allen-Bradley home page at **http://www.ab.com**.

- Only personnel familiar with DeviceNet devices and associated equipment should plan or implement the installation, startup, configuration, and subsequent maintenance of the Bulletin 800E DeviceNet Push Button Station with DeviceLogix Component Technology. Failure to comply may result in personal injury and/or equipment damage.

Vocabulary

In this manual we refer to the:

Bulletin 800E DeviceNet Push Button Station with DeviceLogix Component Technology as "Bulletin 800E Station".

Related Publications

Table P.A

Publication Title	Publication Number
Bulletin 800E 22 mm Push Button Selection Guide	800E-SG001A-US-P
DeviceNet™ Cable System Planning and Installation Manual	DN-6.7.2
ControlLogix™ DeviceNet™ Interface Module User Manual	1756-6.5.19
DeviceNet™ Manager Software User Manual	1787-6.5.3
DeviceNet Media Catalog Guide	1485-CG001A-EN-P
Cable Connection Systems — for I/O connectors Catalog Guide	889-CG001A-US-P
DeviceLogix User Manual	ACIG-UM001A-EN-P

Online Information

EDS Files — EDS files are available for downloading at
http://www.ab.com/networks/eds

Manuals Online — Manuals are available for order or download at
http://www.theautomationbookstore.com

This manual gives an overview of the Bulletin 800E Station and describes how to configure, install, operate, and troubleshoot the device on the DeviceNet network.

Overview of DeviceNet Push Button Stations

Chapter Objectives

This chapter provides an overview of the Bulletin 800E Station and its features. It contains the following information:

Table 1.A

Description

The Bulletin 800E Station offers DeviceNet connection for applications in which network communication is desired. All of the functionality of the DeviceNet interface is contained within the enclosure. The entire unit is powered from the DeviceNet network — a separate power supply is not required. However, if you are powering external I/O from the unit, adequate power supply requirements should be considered.

The Bulletin 800E Station is available as a fully configured two-, three- or four-hole station, and can be mounted horizontally or vertically. Up to two external I/O and E-stop connectors are available, depending upon the number and style of Bulletin 800E operators.

This is an eight-input/four-output device. Two inputs and one output are assigned to each hole position; a two-hole device uses four inputs and two outputs and a four-hole device uses all eight inputs and four outputs internally. Up to four unassigned I/O points can be used for external connections. Therefore, the two-hole enclosure can have up to four I/O points available through two external I/O connectors. The three-hole enclosure can have up to two I/O points available through one external I/O connector. The four-hole enclosure does not allow an external I/O connection.

E-stop connectors are available for a hardwired connection to the E-stop string in all enclosure sizes. The use of an E-stop connector requires the use of an E-stop button in the last position and will use one of the available I/O connector positions. As mentioned above, only two external connectors are available for I/O and E-stops.

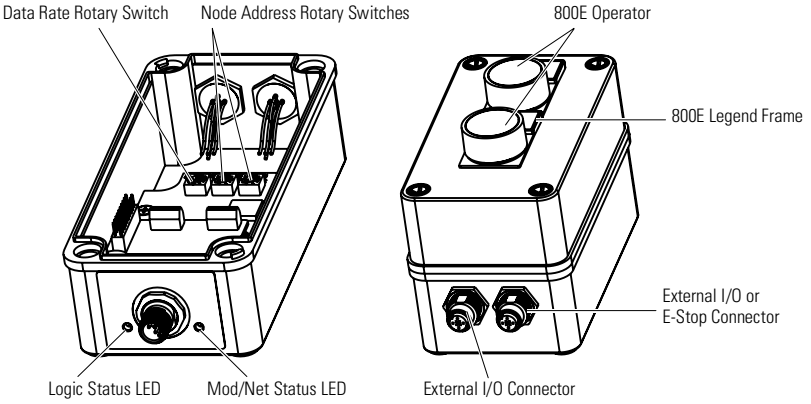
This station also contains two new features in the DeviceNet architecture: Off-Line Node Recovery and DeviceLogix Component Technology. Off-Line Node Recovery allows a device to be recovered when a Duplicate Node Address situation occurs on the system (refer to Chapter 7). The revolutionary new DeviceLogix Component Technology allows local logic control (refer to Chapter 6).

Summary of Features

- Uses robust Bulletin 800EP operators with three-across back-of-panel components
- Many operator and I/O choices means great flexibility
- Fully pre-wired at the factory
- Available in two-, three-, and four-hole versions
- Up to four external I/O points available through quick-disconnect connectors
- Hardwired E-stop connectors available
- DeviceLogix Component Technology
- NEMA 4/13, IP66 environmental rating
- Available as horizontal or vertical configuration
- Powered by DeviceNet connection
- Optional legend frame holders to customize your station
- Illuminated operators use super-bright, long-life LEDs
- Reliable low voltage contact blocks used for all operators
- External Outputs and Sensor Source Voltage (SSV) are short-circuit protected
- Mod/Net and Logic Status LEDs are visible on the outside of the enclosure
- Off-Line Node Recovery
- Auto Device Replacement
- Baud rate can be set through rotary switches or through the use of Autobaud
- Node address can be set through rotary switches or through software node commissioning
- DeviceNet and Power Supply voltage measurement attributes
- Customized I/O assemblies

Station Features

Figure 1.1



Operator Positions

The operator position starts with 0 and increases as you move away from the DeviceNet connector. The figures below give examples of both horizontal and vertical stations.

Figure 1.2 Horizontal Station

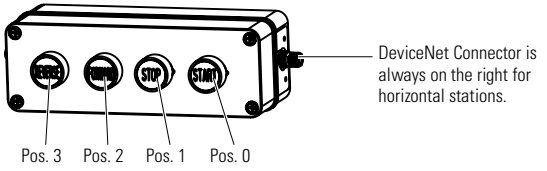


Figure 1.3 Vertical Station

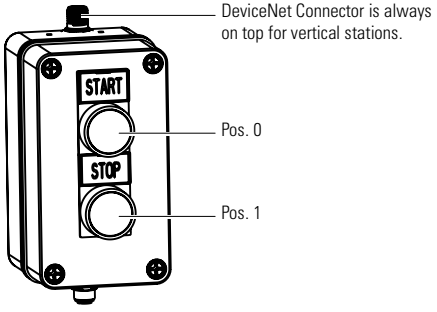
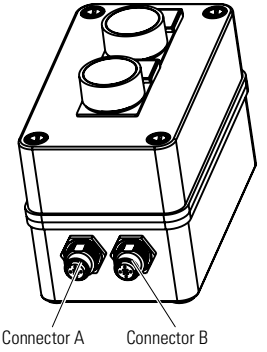


Figure 1.4 Connector Positions



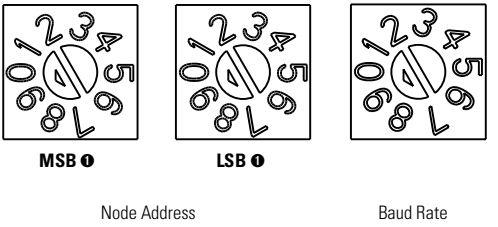
Rotary Switches

The Bulletin 800E Station has three 10-position rotary switches for setting:

- DeviceNet Baud Rate
- DeviceNet Node Address

The switches are located inside the enclosure on the circuit board. The switch settings and functions are shown below.

Figure 1.5 Rotary Switches

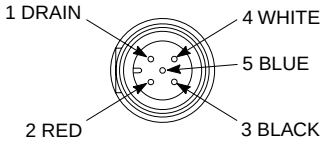


❶ **MSB** = Most Significant Byte
LSB = Least Significant Byte

DeviceNet 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.

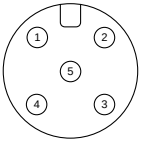
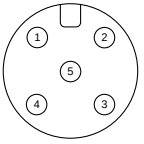
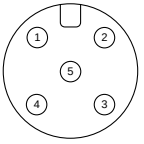
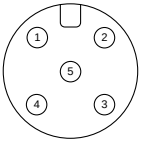
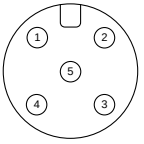
Table 1.B DeviceNet Micro Connector

Micro Connector	Pin #	Signal	Function	Color
	1	SHIELD	SHIELD	Uninsulated
	2	V DC+	Power Supply	Red
	3	COM	Common	Black
	4	CAN_H	Signal High	White
	5	CAN_L	Signal Low	Blue

I/O Connectors

There are 22 combinations of I/O and E-stop options available to the customer, but there are only five I/O connector variations. The pinouts are shown below.

Table 1.C Micro Connector

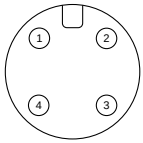
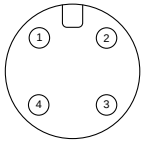
I/O	Output Configuration	Connector Type	Pinout	
			Pin	Signal Name
1 in/ 1 out	Sinking		1	Sensor Source Voltage
			2	Output A
			3	Return
			4	Input A
			5	24V DC
1 in/ 1 out	Sourcing		1	Sensor Source Voltage
			2	Output A
			3	Return
			4	Input A
			5	Not Used
2 in	—		1	Sensor Source Voltage
			2	Input B
			3	Return
			4	Input A
			5	Not Used
2 out	Sinking		1	24V DC
			2	Output B
			3	Not Used
			4	Output A
			5	Not Used
2 out	Sourcing		1	Not Used
			2	Output B
			3	Return
			4	Output A
			5	Not Used

E-Stop Connectors

There are 22 combinations of I/O and E-stop options available to the customer, but there are only two E-stop connector variations. The option of two E-stop contact blocks is for customers that have multiple E-stop strings or the need to switch more than 3 A of current. The pinouts are shown below.

The nomenclature NC in Signal Name stands for Normally Closed. On the "one E-stop contact block" version, pins 1 and 4 are tied together, and 2 and 3 are tied together at terminals C1 and C2 on the contact block, respectively. On the "two E-stop contact block" version, NC1 represents the first contact block, NC2 represents the second contact block, and no pins are tied together.

Table 1.D

		Micro Connector		
E-Stop	**Output Configuration**	**Connector Type**	**Pinout**	
			Pin	**Signal Name**
1 E-stop contact block	—		1	NC - C1
			2	NC - C2
			3	NC - C2
			4	NC - C1
2 E-stop contact blocks	—		1	NC1- C1
			2	NC1- C2
			3	NC2 - C1
			4	NC2 - C2

Auxiliary Components

DeviceNet components and I/O cables are available from Rockwell Automation sold separately. It is your responsibility to install and implement the DeviceNet network according to DeviceNet guidelines.

Replacement Parts

The Bulletin 800E Stations are pre-assembled with all of the parts required to install and use the product. The installer needs only to supply the mounting hardware.

Replacement parts for Bulletin 800E components (operators, contact blocks, and lamps) are sold separately. Refer to the *22 mm Push Button Selection Guide* (Publication 800E-SG001A-US-P) or the Industrial Controls Catalog (Publication A113) for more information.

Quick Start

Chapter Objectives

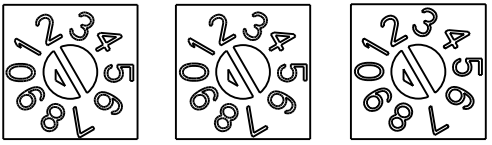
This chapter provides the necessary steps to get the DeviceNet station operating on the network. It contains the following information:

- Data Rate Configuration
- Node Address Configuration
- Bulletin 800E Parameter Configuration
- Scanner Configuration

Data Rate Configuration

Rotary switch 3 (S3) sets the data rate at which the Bulletin 800E Station communicates on the network. The factory default setting is 9 — Autobaud.

Figure 2.1

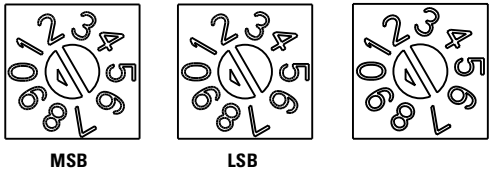


For more information on data rate configuration, refer to Chapter 3 — Installation and Mounting (Setting the Data Rate).

Node Address Configuration

Rotary switches 1 (S1) and 2 (S2) can be used to set the node address (0…63) of the push button station on the network. The factory default is 99 on the switches. This causes the unit to default to software configuration and a node address of 63.

Figure 2.2

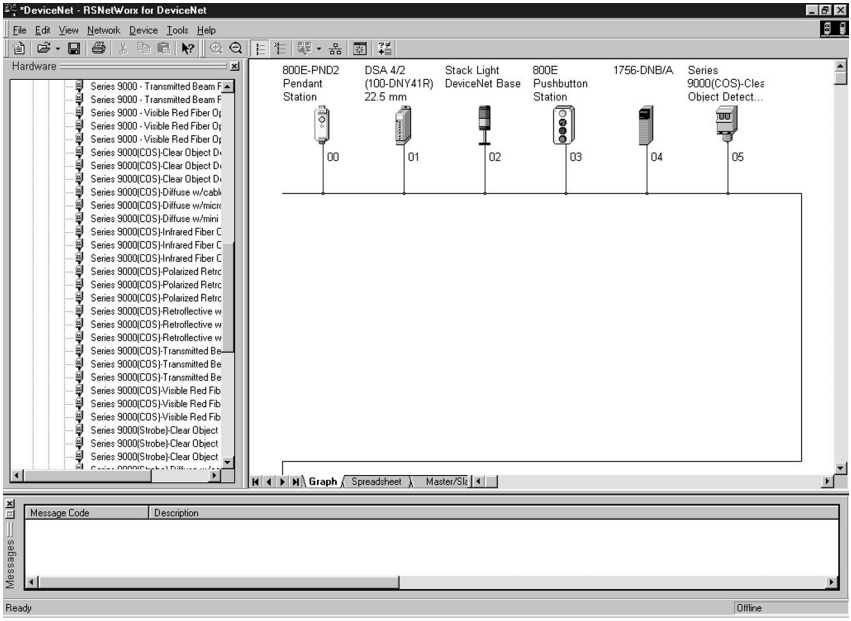


For more information on node address configuration, refer to Chapter 3 — Installation and Mounting (Setting the DeviceNet Node Address).

Bulletin 800E Station Parameter Configuration

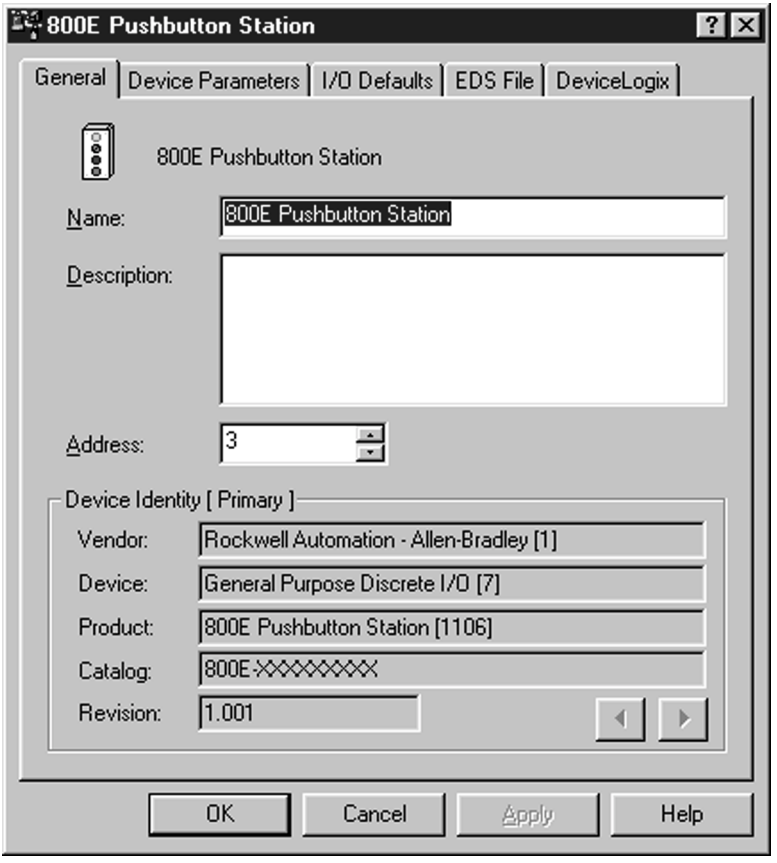
For proper operation, the parameters of the push button station must be configured. There are 61 total parameters in the push button station, but 20 of them are read-only (for monitoring purposes). The parameters can be configured by using RSNetWorx for DeviceNet.

Figure 2.3



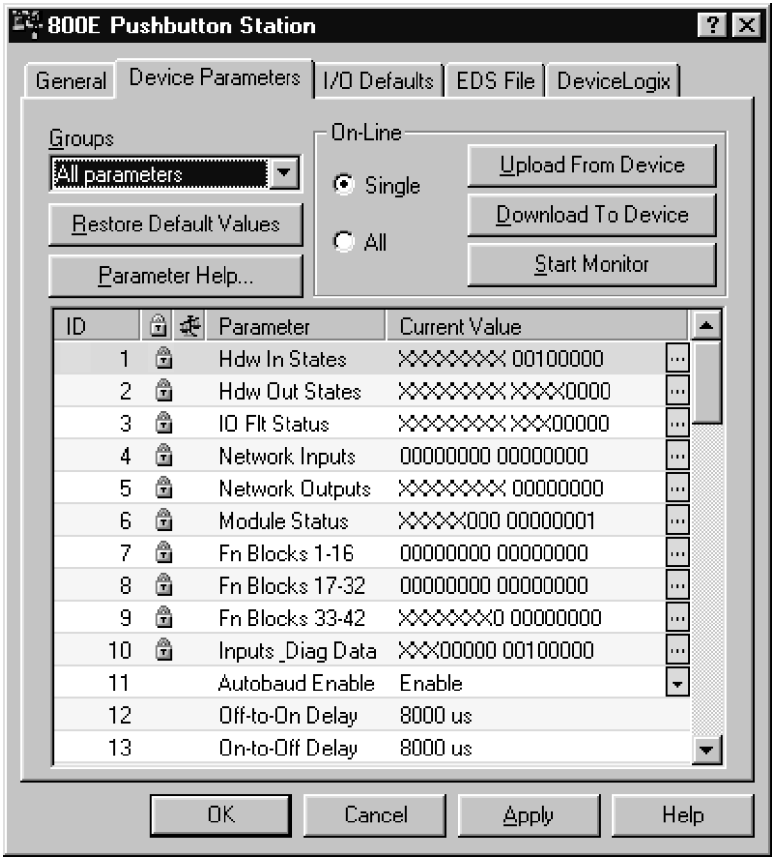
To access the parameter configuration screen from the on-line view, double-click the Bulletin 800E Station icon.

Figure 2.4



Select the **Device Parameters** tab.

Figure 2.5

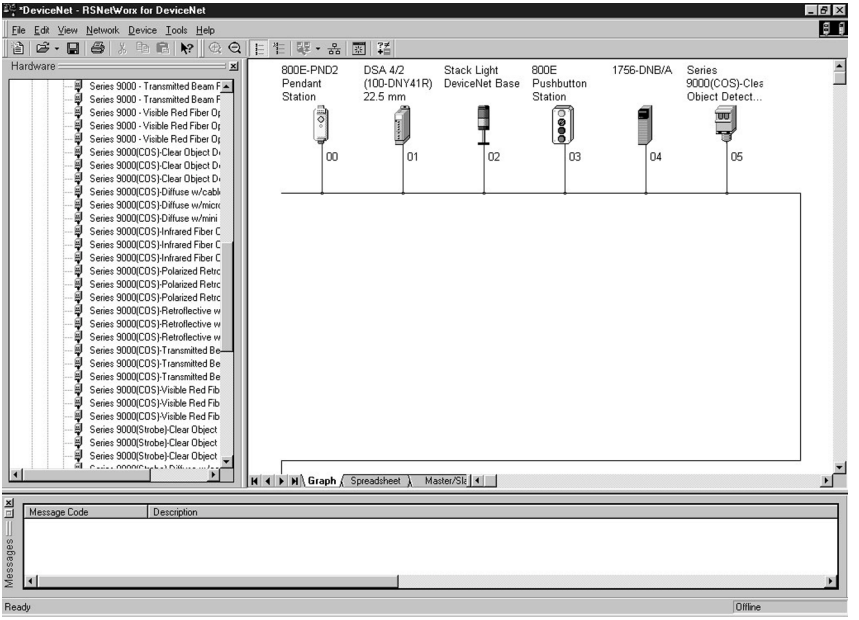


The Bulletin 800E Station will work without any parameter changes, but for logic configuration, parameters must be changed. For more information on device configuration and parameter selection, refer to Chapter 4 — Operations, and RSNetWorx for DeviceNet documentation.

Scanner Configuration

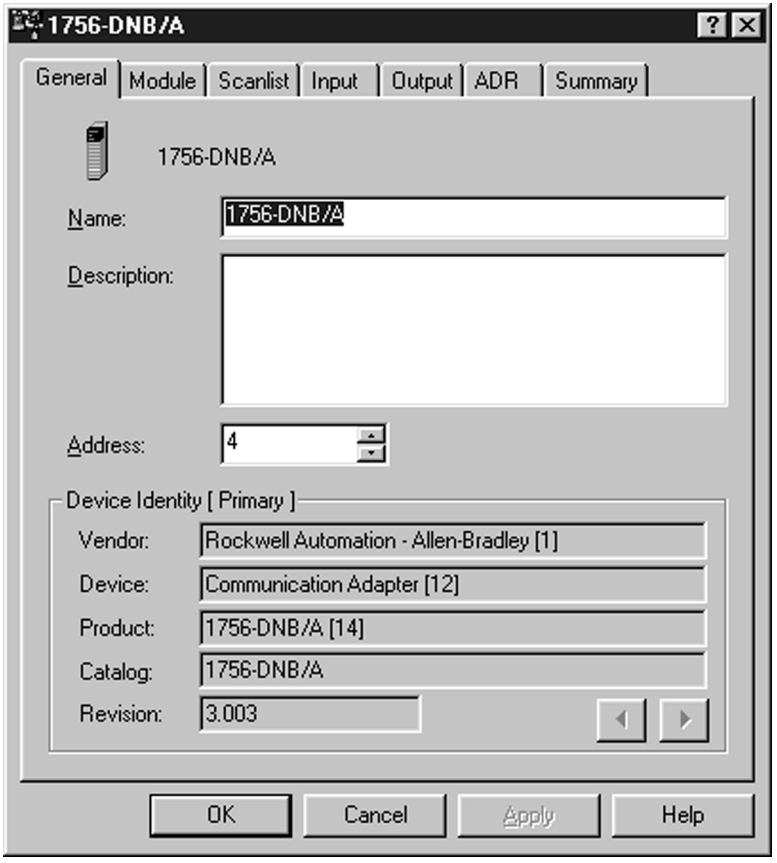
For proper operation in a networked application, the scanner must be configured. The Bulletin 800E Station can also run in stand-alone mode using DeviceLogix. The following graphics show the configuration of a 1756-DNB from the RSNetWorx for DeviceNet software.

Figure 2.6



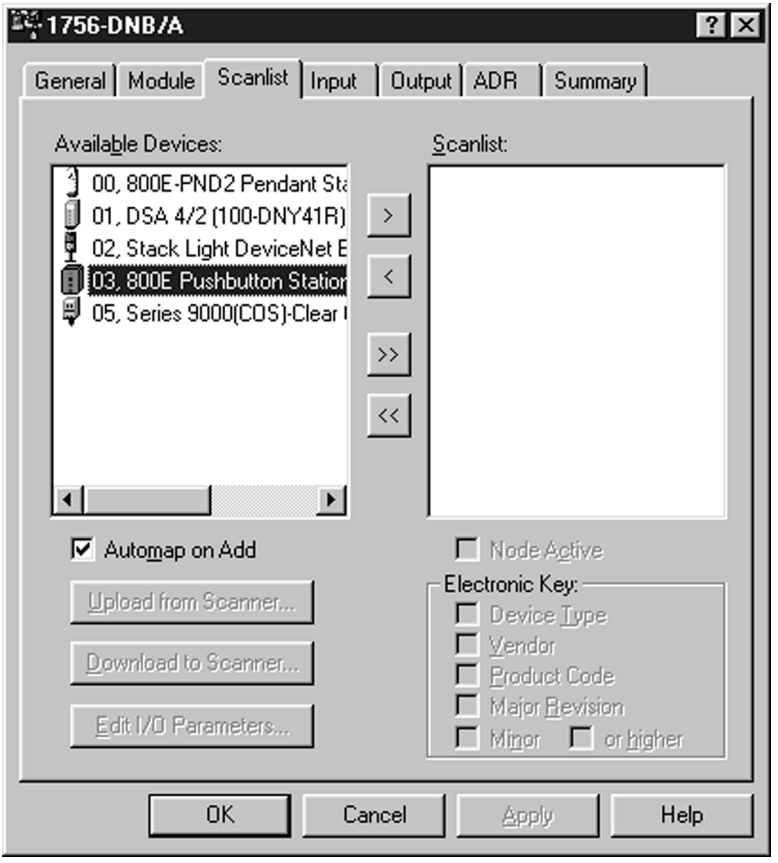
To access the scanner module from an on-line view, double-click the 1756-DNB scanner icon.

Figure 2.7



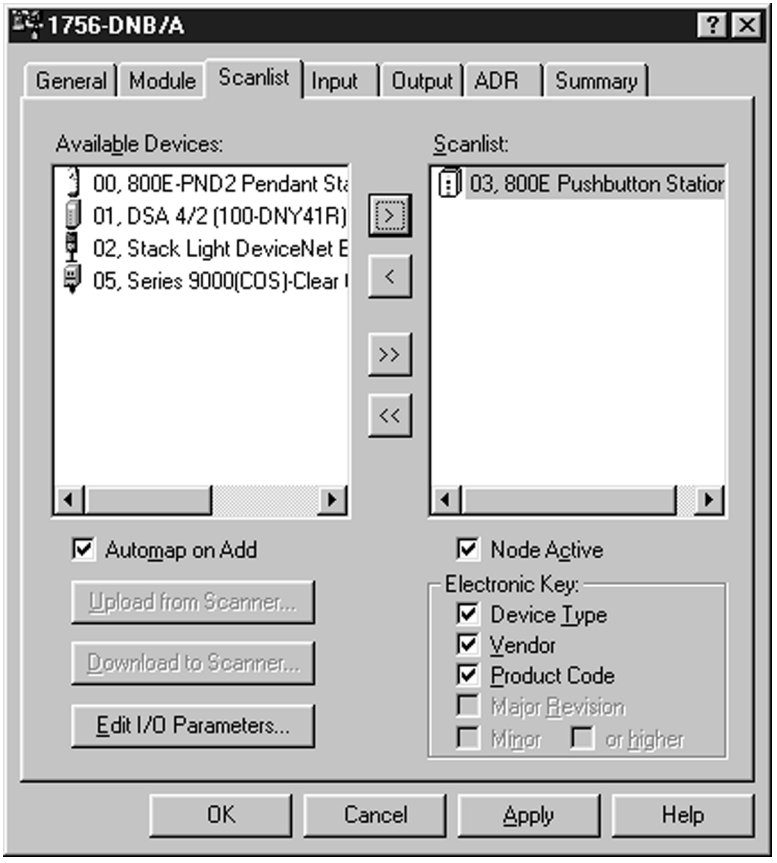
To access the Scanlist Editor, select the **Scanlist** tab.

Figure 2.8



Add the Bulletin 800E Station to the Scanlist. Select the device in the *Available Devices* list. To have the software automatically assign I/O addresses, select the "Automap on Add" selection box. Click the > button.

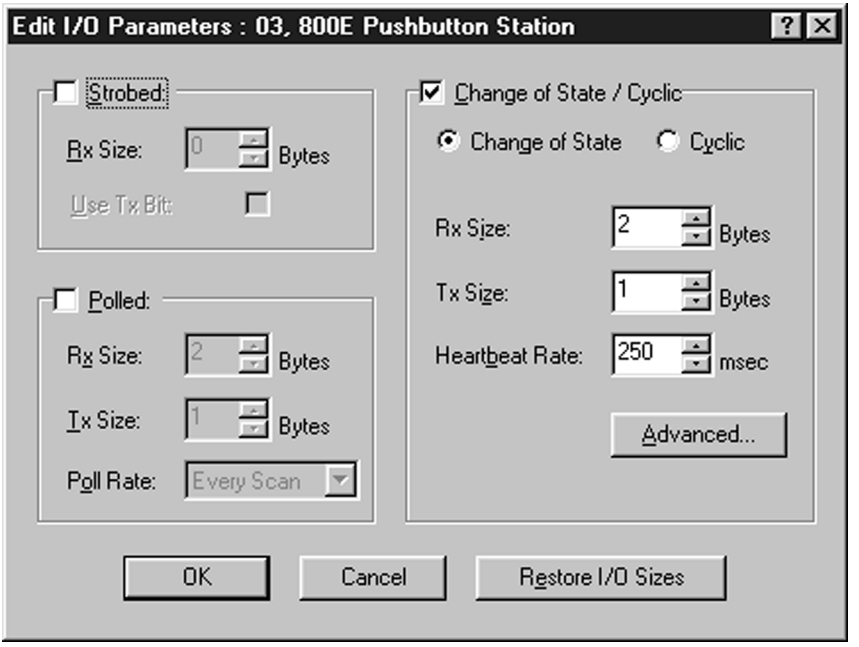
Figure 2.9



To download changes to the scanner, select the *Download to Scanner* button. To view/edit I/O parameters, click the *Edit I/O Parameters* button.

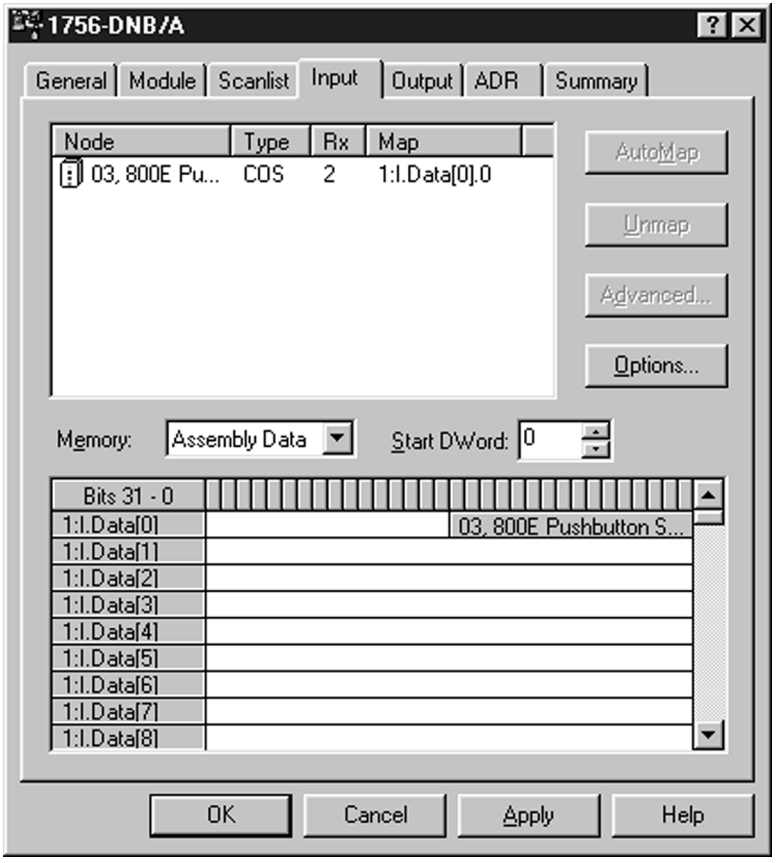
Note that the default option is a Change of State message with the message size being two input bytes and one output byte. The message size of this device is **not** fixed; the message size and content can be changed. Refer to Chapter 4 — Operations (I/O Configuration).

Figure 2.10



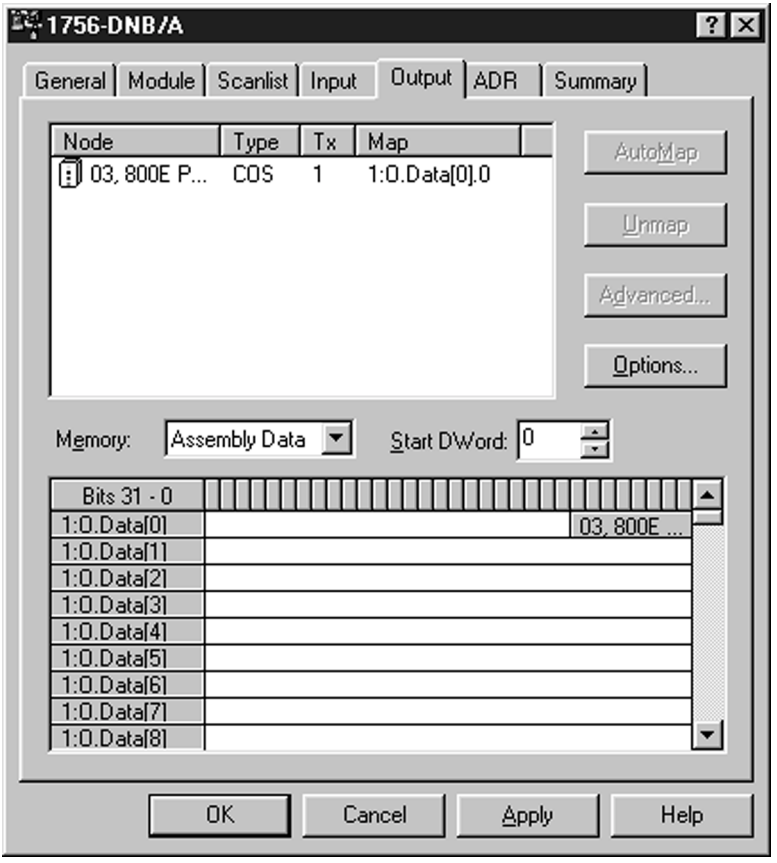
To view/edit the mapping of the input data, click the *Cancel* or *OK* button to return to the Scanner Module screen. Select the **Input** tab.

Figure 2.11



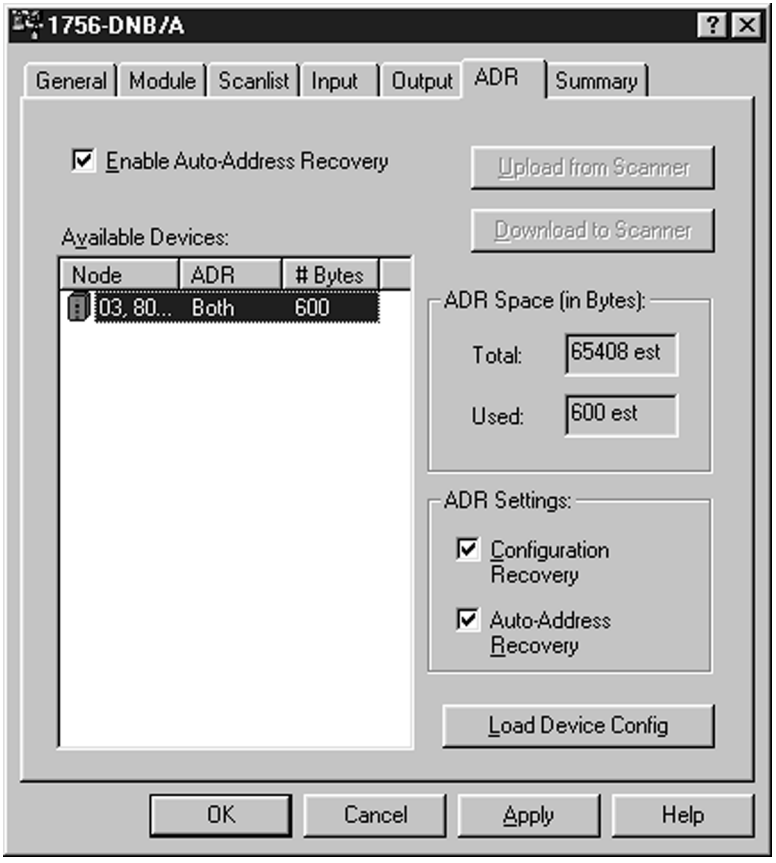
To view/edit the mapping of the output data, select the **Output** tab.

Figure 2.12



To view/edit the auto device replacement parameters, click the **ADR** tab. Select the "Enable Auto-Address Recovery" box. Click *Load Device Config.* Select "Configuration Recovery" and "Auto Address Recovery".

Figure 2.13



For more information on scanner configuration, refer to the *DeviceNet Scanner Configuration Manual* (Publication 1756-6.5.15) for the ControlLogix platform.

Installation and Mounting

Chapter Objectives

This chapter describes how to install and mount a standard Bulletin 800E Station. It contains the following information:

Table 3.A

DeviceNet Guidelines

It is your responsibility to install and implement the DeviceNet network and supported devices according to the DeviceNet guidelines.

Equipment Needed

Install the Bulletin 800E Station using standard electrician's tools.

- Slotted or Phillips screwdrivers of standard and small sizes.

Removing the Enclosure Cover

To set the rotary switches, maintain, and mount the station, you must remove the enclosure cover.

To remove the enclosure cover:

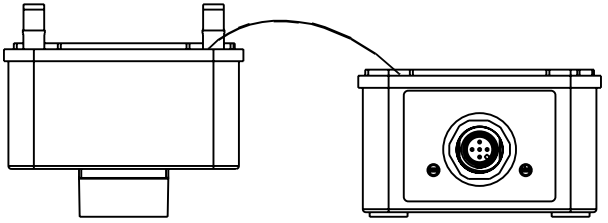
1. Using a slotted screwdriver, remove the four cover screws.

2. Carefully fold the cover to the right on a vertical station or to the bottom on a horizontal station. Do not disconnect the ribbon cable between the cover and the base.

ATTENTION

If removing the ribbon cable is necessary, note the orientation for correct reinstallation.

Figure 3.1



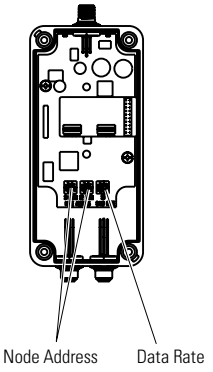
Setting the Rotary Switches

The settings of the rotary switches on the circuit board determine:

- DeviceNet Data Rate
- DeviceNet Node Address

The location of the rotary switches is shown below.

Figure 3.2



Setting the Data Rate

Rotary switch 3 (S3) sets the data rate at which the Bulletin 800E Station communicates on the DeviceNet network. The factory default setting is 9 — Autobaud.

Figure 3.3

Data Rate

The data rate determines the maximum length of the DeviceNet Cable.

Table 3.B

Switch Position	Data Rate	Cable Length (Max.)
0	125 KB	500 m (1600 ft)
1	250 KB	200 m (600 ft)
2	500 KB	100 m (300 ft)
3…9	Autobaud	Refer to above, based on data rate of connected network

To set the DeviceNet data rate:

1. Refer to Table 3.B to select the correct data rate.

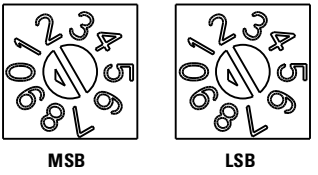
2. If automatic baud rate selection is desired, set switch 3 (S3) in Position 3…9. This disables the switch and allows the device to synchronize to an operational network (if Autobaud is disabled through parameter setup, this selection is not valid and the station will set the baud rate to the last valid setting saved).

There are two parameters that monitor the physical settings of the data rate setting. Parameter 31 reports the actual value on the switch. This is useful because there is no need to open the enclosure to check the switch setting. Parameter 29 indicates whether the switch has been changed since power was applied.

Setting the DeviceNet Node Address

Rotary switches 1 (S1) and 2 (S2) set the node address (0…63) of the Bulletin 800E station. The factory default is 99; this invokes software configuration where the default is 63.

Figure 3.4



Node Address

To set the DeviceNet node address:

1. Set the Most Significant Byte (MSB) switch, switch 1 (S1), to the "tens" position. For example, if the desired node address is 27, set switch 1 (S1) to 2.

2. Set the Least Significant Byte (LSB) Switch, switch 2 (S2), to the "ones" position. For example, if the desired node address is 27, set switch 2 (S2) to 7.

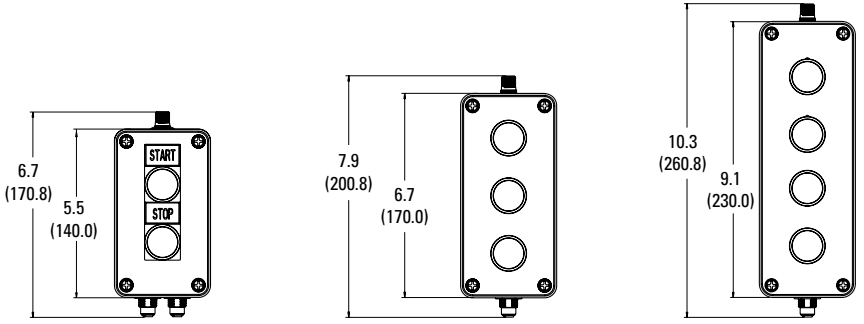
3. If software programmability is desired, set the node address to 64 or greater. This disables both switches and allows programming through the network. Software will default to 63.

There are two parameters that monitor the physical settings of the node address settings. Parameter 30 reports the actual value on the switches. This is useful because there is no need to open the enclosure to check the switch settings. Parameter 28 indicates whether the switches have been changed since power was applied.

Bulletin 800E Station Approximate Dimensions

The figures below show the dimensions of the Bulletin 800E Stations. Dimensions are in inches (millimeters). Dimensions are not intended to be used for manufacturing purposes.

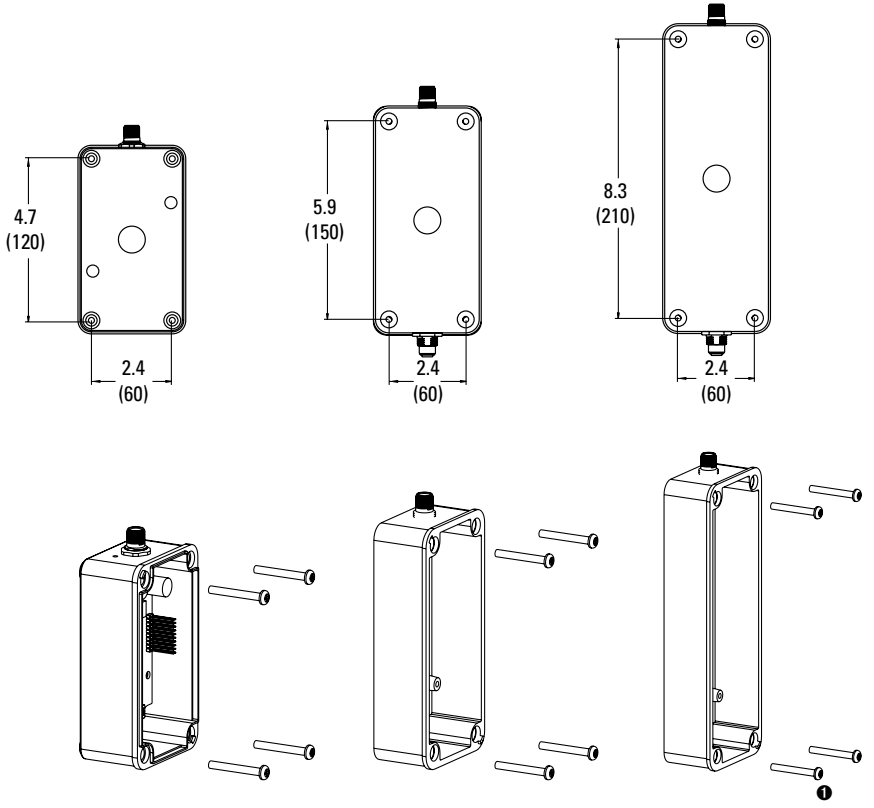
Figure 3.5



Mounting the Bulletin 800E Station

Dimensions are in inches (millimeters). Dimensions are not intended to be used for manufacturing purposes.

Figure 3.6



❶ **10-32 (5 mm) screws:** Heads of screws must be smaller than 3/8" (9.5 mm) to fit inside mounting holes.

Operations

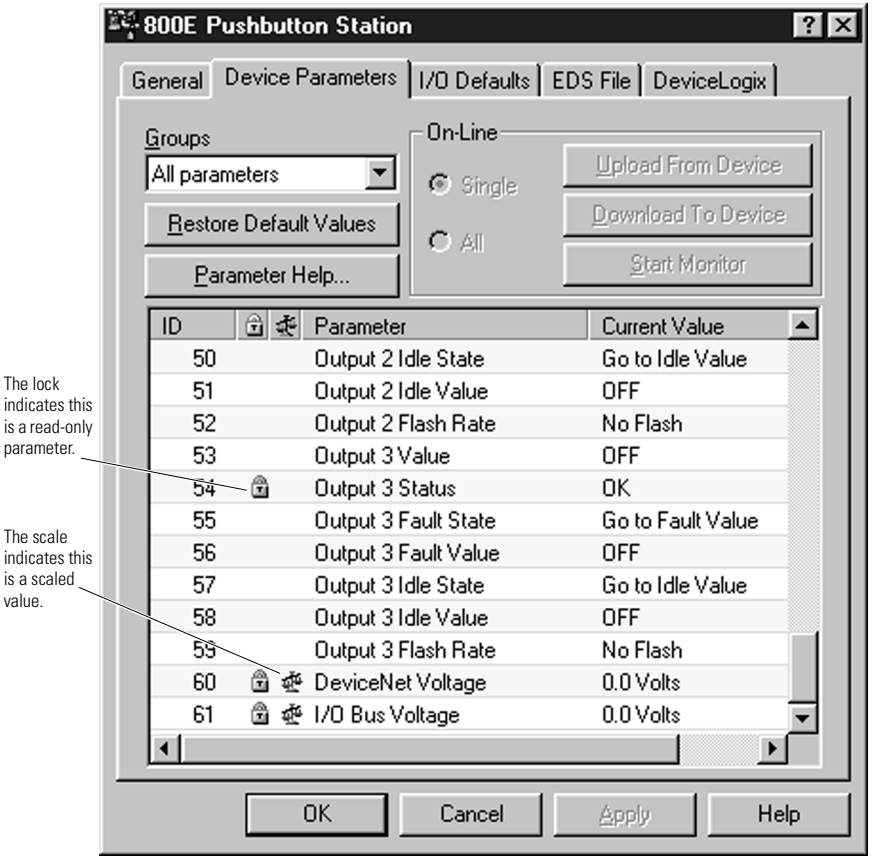
Chapter Objectives

Table 4.A

Parameter Configuration

There are 61 parameters available for monitoring in the Bulletin 800E Station, 41 of which can be changed. Configuration of the parameters is accomplished through the use of RSNetWorx for DeviceNet. The following illustration helps explain which parameters are configurable and which are for monitoring.

Figure 4.1



IMPORTANT When downloading parameter changes to the Bulletin 800E Station, it is important to download one at a time (i.e., single selected). When trying to download all, there will be an object state conflict error if the Bulletin 800E Station is running a DeviceLogix configuration or if a master is in control of the station. Parameters 14…19, and 25 will generate this error.

The following tables give a brief explanation of the individual parameters and their uses.

Parameter 1 — Hardware Input States

This parameter is a read-only parameter used for monitoring. It shows the value on the eight inputs of the device. For external input mapping, refer to Table 4.AL.

Table 4.B

Bit Number	Function When = 1	Function When = 0	Bit Number	Function When = 1	Function When = 0
8…15	—	—	3	Input 3 Active	Input 3 Inactive
7	Input 7 Active	Input 7 Inactive	2	Input 2 Active	Input 2 Inactive
6	Input 6 Active	Input 6 Inactive	1	Input 1 Active	Input 1 Inactive
5	Input 5 Active	Input 5 Inactive	0	Input 0 Active	Input 0 Inactive
4	Input 4 Active	Input 4 Inactive	—	—	—

Parameter 2 — Hardware Output States

This parameter is a read-only parameter used for monitoring. It shows the value on the four outputs of the device. For external output mapping, refer to Table 4.AL.

Table 4.C

Bit Number	Function When = 1	Function When = 0	Bit Number	Function When = 1	Function When = 0
4…15	—	—	1	Output 1 Active	Output 1 Inactive
3	Output 3 Active	Output 3 Inactive	0	Output 0 Active	Output 0 Inactive
2	Output 2 Active	Output 2 Inactive	—	—	—

Parameter 3 — I/O Fault Status

This parameter is a read-only parameter used for monitoring. It shows the value on the five fault status bits that are related to the external I/O of the device. There is one SSV per I/O connector (a further explanation of the mapping of SSV to the I/O connectors is given later in this chapter in I/O Configuration). The internal power supply bit is used for indicating a possible impending failure. The Bulletin 800E Station keeps the internal voltage at 25V no matter what the input voltage is. If it goes too low, this bit is set, indicating a failure or too large of a load on an output. For short circuit I/O mapping, refer to Table 4.AL.

Table 4.D

Bit Number	Function When = 1	Function When = 0	Bit Number	Function When = 1	Function When = 0
5…15	—	—	2	Internal Power Supply Out of Range	Internal Power Supply OK
4	Output 3 Short Circuit	Output 3 OK	1	SSVB Short Circuit	SSVB OK
3	Output 2 Short Circuit	Output 2 OK	0	SSVA Short Circuit	SSVA OK

Parameter 4 — Network Inputs

This parameter is a read-only parameter used for monitoring. It shows the value on the 16 network message inputs of the device. Network Inputs are used with DeviceLogix and are further explained in Chapter 6.

Table 4.E

Bit Number	Function When = 1	Function When = 0	Bit Number	Function When = 1	Function When = 0
15	Net Input 15 Active	Net Input 15 Inactive	7	Net Input 7 Active	Net Input 7 Inactive
14	Net Input 14 Active	Net Input 14 Inactive	6	Net Input 6 Active	Net Input 6 Inactive
13	Net Input 13 Active	Net Input 13 Inactive	5	Net Input 5 Active	Net Input 5 Inactive
12	Net Input 12 Active	Net Input 12 Inactive	4	Net Input 4 Active	Net Input 4 Inactive
11	Net Input 11 Active	Net Input 11 Inactive	3	Net Input 3 Active	Net Input 3 Inactive
10	Net Input 10 Active	Net Input 10 Inactive	2	Net Input 2 Active	Net Input 2 Inactive
9	Net Input 9 Active	Net Input 9 Inactive	1	Net Input 1 Active	Net Input 1 Inactive
8	Net Input 8 Active	Net Input 8 Inactive	0	Net Input 0 Active	Net Input 0 Inactive

Parameter 5 — Network Outputs

This parameter is a read-only parameter used for monitoring. It shows the value on the eight network message outputs of the device. Network Outputs are used with DeviceLogix and are further explained in Chapter 6.

Table 4.F

Bit Number	Function When = 1	Function When = 0	Bit Number	Function When = 1	Function When = 0
8…15	—	—	3	Net Output 3 Active	Net Output 3 Inactive
7	Net Output 7 Active	Net Output 7 Inactive	2	Net Output 2 Active	Net Output 2 Inactive
6	Net Output 6 Active	Net Output 6 Inactive	1	Net Output 1 Active	Net Output 1 Inactive
5	Net Output 5 Active	Net Output 5 Inactive	0	Net Output 0 Active	Net Output 0 Inactive
4	Net Output 4 Active	Net Output 4 Inactive	—	—	—

Parameter 6 — Module Status

This parameter is a read-only parameter used for monitoring. It shows the value on the eleven status bits that are related to the module status of the device.

Table 4.G

Bit Number	Function When = 1	Function When = 0	Bit Number	Function When = 1	Function When = 0
11…15	—	—	5	COS Message CNXN faulted	COS Message CNXN OK
10	Power Supply Faulted	Power Supply OK	4	Poll Message CNXN faulted	Poll Message CNXN OK
9	Minor Fault exists	Minor Fault does not exist	3	Explicit Message CNXN faulted	Explicit Message CNXN OK
8	Network Fault exists	Network fault does not exist	2	COS Message CNXN exists	COS Message CNXN does not exist
7	COS Message CNXN idle	COS Message CNXN not idle	1	Poll Message CNXN exists	Poll Message CNXN does not exist
6	Poll Message CNXN idle	Poll Message CNXN not idle	0	Explicit Message CNXN exists	Explicit Message CNXN does not exist

Parameter 7 — Function Block Outputs 1…16

This parameter is a read-only parameter used for monitoring. It shows the value on the output of the first 16 function blocks from the logic editor. Function blocks are used with DeviceLogix and are further explained in Chapter 6.

ATTENTION

The function block numbers may change as a DeviceLogix configuration is updated.

Table 4.H

Bit Number	Function When = 1	Function When = 0	Bit Number	Function When = 1	Function When = 0
15	Function Block 16 Output Active	Function Block 16 Output Inactive	7	Function Block 8 Output Active	Function Block 8 Output Inactive
14	Function Block 15 Output Active	Function Block 15 Output Inactive	6	Function Block 7 Output Active	Function Block 7 Output Inactive
13	Function Block 14 Output Active	Function Block 14 Output Inactive	5	Function Block 6 Output Active	Function Block 6 Output Inactive
12	Function Block 13 Output Active	Function Block 13 Output Inactive	4	Function Block 5 Output Active	Function Block 5 Output Inactive
11	Function Block 12 Output Active	Function Block 12 Output Inactive	3	Function Block 4 Output Active	Function Block 4 Output Inactive
10	Function Block 11 Output Active	Function Block 11 Output Inactive	2	Function Block 3 Output Active	Function Block 3 Output Inactive
9	Function Block 10 Output Active	Function Block 10 Output Inactive	1	Function Block 2 Output Active	Function Block 2 Output Inactive
8	Function Block 9 Output Active	Function Block 9 Output Inactive	0	Function Block 1 Output Active	Function Block 1 Output Inactive

Parameter 8 — Function Block Outputs 17…32

This parameter is a read-only parameter used for monitoring. It shows the value on the output of the second 16 function blocks from the logic editor. Function blocks are used with DeviceLogix and are further explained in Chapter 6.

ATTENTION

The function block numbers may change as a DeviceLogix configuration is updated.

Table 4.I

Bit Number	Function When = 1	Function When = 0	Bit Number	Function When = 1	Function When = 0
15	Function Block 32 Output Active	Function Block 32 Output Inactive	7	Function Block 24 Output Active	Function Block 24 Output Inactive
14	Function Block 31 Output Active	Function Block 31 Output Inactive	6	Function Block 23 Output Active	Function Block 23 Output Inactive
13	Function Block 30 Output Active	Function Block 30 Output Inactive	5	Function Block 22 Output Active	Function Block 22 Output Inactive
12	Function Block 29 Output Active	Function Block 29 Output Inactive	4	Function Block 21 Output Active	Function Block 21 Output Inactive
11	Function Block 28 Output Active	Function Block 28 Output Inactive	3	Function Block 20 Output Active	Function Block 20 Output Inactive
10	Function Block 27 Output Active	Function Block 27 Output Inactive	2	Function Block 19 Output Active	Function Block 19 Output Inactive
9	Function Block 26 Output Active	Function Block 26 Output Inactive	1	Function Block 18 Output Active	Function Block 18 Output Inactive
8	Function Block 25 Output Active	Function Block 25 Output Inactive	0	Function Block 17 Output Active	Function Block 17 Output Inactive

Parameter 9 — Function Block Outputs 33…42

This parameter is a read-only parameter used for monitoring. It shows the value on the output of the final 10 function blocks from the logic editor. Function blocks are used with DeviceLogix and are further explained in Chapter 6.

ATTENTION

The function block numbers may change as a DeviceLogix configuration is updated.

Table 4.J

Bit Number	Function When = 1	Function When = 0	Bit Number	Function When = 1	Function When = 0
10…15	—	—	4	Function Block 37 Output Active	Function Block 37 Output Inactive
9	Function Block 42 Output Active	Function Block 42 Output Inactive	3	Function Block 36 Output Active	Function Block 36 Output Inactive
8	Function Block 41 Output Active	Function Block 41 Output Inactive	2	Function Block 35 Output Active	Function Block 35 Output Inactive
7	Function Block 40 Output Active	Function Block 40 Output Inactive	1	Function Block 34 Output Active	Function Block 34 Output Inactive
6	Function Block 39 Output Active	Function Block 39 Output Inactive	0	Function Block 33 Output Active	Function Block 33 Output Inactive
5	Function Block 38 Output Active	Function Block 38 Output Inactive	—	—	—

Parameter 10 — Hardware Input and I/O Fault Status

This parameter is a read-only parameter used for monitoring. It shows the value on the eight inputs of the device and the I/O Fault Status. This is combination of Parameters 1 and 3. For further description, refer to these parameters.

Table 4.K

Bit Number	Function When = 1	Function When = 0	Bit Number	Function When = 1	Function When = 0
13…15	—	—	6	Input 6 Active	Input 6 Inactive
12	Output 3 Short Circuit	Output 3 OK	5	Input 5 Active	Input 5 Inactive
11	Output 2 Short Circuit	Output 2 OK	4	Input 4 Active	Input 4 Inactive
10	Internal Power Supply Out of Range	Internal Power Supply OK	3	Input 3 Active	Input 3 Inactive
9	SSVB Short Circuit	SSVB OK	2	Input 2 Active	Input 2 Inactive
8	SSVA Short Circuit	SSVA OK	1	Input 1 Active	Input 1 Inactive
7	Input 7 Active	Input 7 Inactive	0	Input 0 Active	Input 0 Inactive

Parameter 11 — Autobaud Enable

When enabled, the push button station automatically communicates at the network baud rate detected at power-on. When disabled, the baud rate must be set correctly by the user during node commissioning. This parameter's setting takes effect after a module reset or at power-on. **Note:** Only valid when rotary switch is set between 3…9. The default value is Enabled.

Table 4.L

Value	Function	Value	Function
0	Disabled	1	Enabled

Parameter 12 — Off-to-On Delay

The Off-to-On delay determines the amount of time for which an input signal must be fully present before the push button station updates the I/O. It is a means of filtering for noise on input lines. The value must be set in units of microseconds. The default is set to 8000 µs to ensure proper filtering on noisy lines, but it can be reduced depending on the application.

Table 4.M

Value (µs)	Function	Value (µs)	Function
0	0 ms delay	8000	8 ms delay
2000	2 ms delay	16000	16 ms delay
4000	4 ms delay	—	—

Parameter 13 — On-to-Off Delay

The On-to-Off delay determines the amount of time for which an input signal must be fully absent before the push button station updates the I/O. It is a means of filtering for noise on input lines. The value must be set in units of microseconds. The default is set to 8000 µs to ensure proper filtering on noisy lines, but it can be reduced depending on the application.

Table 4.N

Value (µs)	Function	Value (µs)	Function
0	0 ms delay	8000	8 ms delay
2000	2 ms delay	16000	16 ms delay
4000	4 ms delay	—	—

Parameter 14 — Output Assembly

The output assembly consumes data from the network (e.g., the output image table from the master). This parameter controls where the data is stored.

- If the data is meant for physical outputs, use Assembly 33.
- If the data is meant for Network Inputs, use Assembly 183. (This is the same as Parameter 4. Refer to Parameter 4 for bit explanation.)

DeviceLogix uses Network Inputs. For more information on DeviceLogix, refer to Chapter 6. If a DeviceLogix configuration is used in the device, the Bulletin 800E Station will automatically map Assembly 33 to Network Inputs and the physical outputs will only be controlled by DeviceLogix. The ramification of this is that only four Network Inputs are then allowed instead of the 16 allowed if Assembly 183 is mapped.

This parameter **cannot** be changed while the I/O is active, meaning that all DeviceLogix configurations must be disabled and the Master must be put in program mode. No I/O connections can exist, because the meaning of the data will change. Furthermore, the size of the I/O connection must change if this parameter is changed (This affects the scanner configuration). Assembly 33 can only consume one byte of data, Assembly 183 consumes two bytes of data. The default for this parameter is 33.

Table 4.0

Value — Assembly Number	Function
33	Hardware Outputs — 1 byte of data
183	Network Inputs (Parameter 4) — 2 bytes of data

Parameter 15 — Input Assembly

The input assembly produces data to the network (e.g., to the input image table of the master). This parameter controls where the data comes from.

- If the data is meant to reflect the status of the eight physical inputs, use Assembly 4.
- If the data is meant to reflect the status of the eight physical inputs and the I/O Fault Status, use Assembly 101. (This is the same data as Parameter 10. Refer to Parameter 10 for bit explanation.)
- If the data is meant to reflect the status of the DeviceLogix Network Outputs, use Assembly 184. (This is the same data as Parameter 5. Refer to Parameter 5 for bit explanation.)
- If the data is meant to reflect the DeviceLogix Hardware Inputs, use Assembly 180. (This is the same data as Parameter 1. Refer to Parameter 1 for bit explanation.)
- If the data is meant to reflect the Hardware Output Status, use Assembly 181. (This is the same data as Parameter 2. Refer to Parameter 2 for bit explanation.)
- If the data is meant to reflect the I/O Fault Status only, use Assembly 182. (This is the same data as Parameter 3. Refer to Parameter 3 for bit explanation.)
- If the data is meant to reflect the DeviceLogix Function Block 1…16 Outputs, use Assembly 186. (This is the same data as Parameter 7. Refer to Parameter 7 for bit explanation.) **Note:** Function Block numbering will change as the DeviceLogix program is changed.
- If the data is meant to reflect the DeviceLogix Function Block 17…32 Outputs, use Assembly 187. (This is the same data as Parameter 8. Refer to Parameter 8 for bit explanation.) **Note:** Function Block numbering will change as the DeviceLogix program is changed.
- If the data is meant to reflect the DeviceLogix Function Block 33…42 Outputs, use Assembly 188. (This is the same data as Parameter 9. Refer to Parameter 9 for bit explanation.) **Note:** Function Block numbering will change as the DeviceLogix program is changed.
- If the data is meant to reflect the Module Status Outputs, use Assembly 185. (This is the same data as Parameter 6. Refer to Parameter 6 for bit explanation.)
- If the customer desires flexibility in the Input configuration, use Assembly 100. This parameter is then used with Parameters 16…19 and configurable up to 8 bytes of data.

This parameter **cannot** be changed while the I/O is active, meaning that all DeviceLogix configurations must be disabled and the Master must be put in program mode. No I/O connections can exist, because the meaning of the data will change. Furthermore, the size of the I/O connection must change if this parameter is changed (this affects the scanner configuration). Assembly 101 is the default.

Table 4.P

Value — Assembly Number	Function (Same as Parameter x) — Number of Bytes of Data
4	Hardware Inputs — 1 byte
100	Customizable use with Parameters 16…19 — Up to 8 bytes
101	Hardware Inputs and Diagnostic Data (Parameter 10) — 2 bytes
180	Hardware Inputs (Parameter 1) — 2 bytes
181	Hardware Output Status (Parameter 2) — 2 bytes
182	I/O Fault Status (Parameter 3) — 2 bytes
184	Network Outputs (Parameter 5) — 2 bytes
185	Module Status (Parameter 6) — 2 bytes
186	DeviceLogix Function Block 1…16 Outputs (Parameter 7) — 2 bytes
187	DeviceLogix Function Block 17…32 Outputs (Parameter 8) — 2 bytes
188	DeviceLogix Function Block 33…42 Outputs (Parameter 9) — 2 bytes

Parameters 16…19 — Input Assembly Words

These parameters are used in conjunction with Parameter 15. When Parameter 15 is set to Assembly 100, then these parameters become active. The user can select which data will get sent back in the input data. The assembly word chosen will match an existing parameter (refer to Table 4.Q), for bit explanations refer to corresponding parameter. Each parameter is equivalent to two bytes of data.

These parameters **cannot** be changed while the I/O is active, meaning that all DeviceLogix configurations must be disabled and the Master must be put in program mode. No I/O connections can exist, because the meaning of the data will change. Furthermore, the size of the I/O connection must change if this parameter is changed. If 0 is chosen, all Input Assembly Words after this one are ignored. For instance, if Parameter 16 is set to 1, Parameter 17 to 3, and Parameter 18 to 0, then Parameters 18 and 19 are ignored. This means that four bytes (two words) of data are being returned to the master, and the I/O connection size in the scanner should be set appropriately. The defaults are 1, 3, 5, and 6, respectively.

Table 4.Q

Value — Assembly Number	Function (Data From)
0	Produce no data from this position and all subsequent positions
1	Hardware Inputs (Parameter 1)
2	Hardware Output Status (Parameter 2)
3	I/O Fault Status (Parameter 3)
4	Network Inputs (Parameter 4)
5	Network Outputs (Parameter 5)
6	Module Status (Parameter 6)
7	DeviceLogix Function Block 1…16 Outputs (Parameter 7)
8	DeviceLogix Function Block 17…32 Outputs (Parameter 8)
9	DeviceLogix Function Block 33…42 Outputs (Parameter 9)
10	Hardware Inputs and Diagnostic Data (Parameter 10)

Parameter 20 — Input COS Mask

This parameter determines whether a Change of State message should be initiated when a hardware input changes state. If the mask for a bit = 1, then a message will be sent. The default for this parameter is all ones.

Table 4.R

Bit Number	If Mask = 1	If Mask = 0
8…15	—	—
7	Input 7 Change initiates a message	Input 7 Change does not initiate a message
6	Input 6 Change initiates a message	Input 6 Change does not initiate a message
5	Input 5 Change initiates a message	Input 5 Change does not initiate a message
4	Input 4 Change initiates a message	Input 4 Change does not initiate a message
3	Input 3 Change initiates a message	Input 3 Change does not initiate a message
2	Input 2 Change initiates a message	Input 2 Change does not initiate a message
1	Input 1 Change initiates a message	Input 1 Change does not initiate a message
0	Input 0 Change initiates a message	Input 0 Change does not initiate a message

Parameter 21 — Module Status COS Mask

This parameter determines whether a Change of State message should be initiated when a module status bit changes state. If the mask for a bit = 1, then a message will be sent. The default for this parameter is all zeroes.

Table 4.S

Bit Number	Function When = 1	Function When = 0	Bit Number	Function When = 1	Function When = 0
11…15	—	—	5	COS Message CNXN faulted — Change initiates a message	COS Message CNXN faulted — Change does not initiate a message
10	Power Supply fault — Change initiates a message	Power Supply fault — Change does not initiate a message	4	Poll Message CNXN faulted — Change initiates a message	Poll Message CNXN faulted — Change does not initiate a message
9	Minor Fault — Change initiates a message	Minor Fault — Change does not initiate a message	3	Explicit Message CNXN faulted — Change initiates a message	Explicit Message CNXN faulted — Change does not initiate a message
8	Network Fault — Change initiates a message	Network fault — Change does not initiate a message	2	COS Message CNXN exists — Change initiates a message	COS Message CNXN exists — Change does not initiate a message
7	COS Message CNXN idle — Change initiates a message	COS Message CNXN idle — Change does not initiate a message	1	Poll Message CNXN exists — Change initiates a message	Poll Message CNXN exists — Change does not initiate a message
6	Poll Message CNXN idle — Change initiates a message	Poll Message CNXN idle — Change does not initiate a message	0	Explicit Message CNXN exists — Change initiates a message	Explicit Message CNXN exists — Change does not initiate a message

Parameter 22 — Function Block 1…16 COS Mask

This parameter determines whether a Change of State message should be initiated when a function block bit changes state. If the mask for a bit = 1, then a message will be sent. The default for this parameter is all zeroes.

Table 4.T

Bit Number	Function When = 1	Function When = 0	Bit Number	Function When = 1	Function When = 0
15	Function Block 16 Output — Change initiates a message	Function Block 16 Output — Change does not initiate a message	7	Function Block 8 Output — Change initiates a message	Function Block 8 Output — Change does not initiate a message
14	Function Block 15 Output — Change initiates a message	Function Block 15 Output — Change does not initiate a message	6	Function Block 7 Output — Change initiates a message	Function Block 7 Output — Change does not initiate a message
13	Function Block 14 Output — Change initiates a message	Function Block 14 Output — Change does not initiate a message	5	Function Block 6 Output — Change initiates a message	Function Block 6 Output — Change does not initiate a message
12	Function Block 13 Output — Change initiates a message	Function Block 13 Output — Change does not initiate a message	4	Function Block 5 Output — Change initiates a message	Function Block 5 Output — Change does not initiate a message
11	Function Block 12 Output — Change initiates a message	Function Block 12 Output — Change does not initiate a message	3	Function Block 4 Output — Change initiates a message	Function Block 4 Output — Change does not initiate a message
10	Function Block 11 Output — Change initiates a message	Function Block 11 Output — Change does not initiate a message	2	Function Block 3 Output — Change initiates a message	Function Block 3 Output — Change does not initiate a message
9	Function Block 10 Output — Change initiates a message	Function Block 10 Output — Change does not initiate a message	1	Function Block 2 Output — Change initiates a message	Function Block 2 Output — Change does not initiate a message
8	Function Block 9 Output — Change initiates a message	Function Block 9 Output — Change does not initiate a message	0	Function Block 1 Output — Change initiates a message	Function Block 1 Output — Change does not initiate a message

Parameter 23 — Function Block 17…32 COS Mask

This parameter determines whether a Change of State message should be initiated when a function block bit changes state. If the mask for a bit = 1, then a message will be sent. The default for this parameter is all zeroes.

Table 4.U

Bit Number	Function When = 1	Function When = 0	Bit Number	Function When = 1	Function When = 0
15	Function Block 32 Output — Change initiates a message	Function Block 32 Output — Change does not initiate a message	7	Function Block 24 Output — Change initiates a message	Function Block 24 Output — Change does not initiate a message
14	Function Block 31 Output — Change initiates a message	Function Block 31 Output — Change does not initiate a message	6	Function Block 23 Output — Change initiates a message	Function Block 23 Output — Change does not initiate a message
13	Function Block 30 Output — Change initiates a message	Function Block 30 Output — Change does not initiate a message	5	Function Block 22 Output — Change initiates a message	Function Block 22 Output — Change does not initiate a message
12	Function Block 29 Output — Change initiates a message	Function Block 29 Output — Change does not initiate a message	4	Function Block 21 Output — Change initiates a message	Function Block 21 Output — Change does not initiate a message
11	Function Block 28 Output — Change initiates a message	Function Block 28 Output — Change does not initiate a message	3	Function Block 20 Output — Change initiates a message	Function Block 20 Output — Change does not initiate a message
10	Function Block 27 Output — Change initiates a message	Function Block 27 Output — Change does not initiate a message	2	Function Block 19 Output — Change initiates a message	Function Block 19 Output — Change does not initiate a message
9	Function Block 26 Output — Change initiates a message	Function Block 26 Output — Change does not initiate a message	1	Function Block 18 Output — Change initiates a message	Function Block 18 Output — Change does not initiate a message
8	Function Block 25 Output — Change initiates a message	Function Block 25 Output — Change does not initiate a message	0	Function Block 17 Output — Change initiates a message	Function Block 17 Output — Change does not initiate a message

Parameter 24 — Function Block 33…42 COS Mask

This parameter determines whether a Change of State message should be initiated when a function block bit changes state. If the mask for a bit = 1, then a message will be sent. The default for this parameter is all zeroes.

Table 4.V

Bit Number	Function When = 1	Function When = 0	Bit Number	Function When = 1	Function When = 0
10…15	—	—	4	Function Block 37 Output — Change initiates a message	Function Block 37 Output — Change does not initiate a message
9	Function Block 42 Output — Change initiates a message	Function Block 42 Output — Change does not initiate a message	3	Function Block 36 Output — Change initiates a message	Function Block 36 Output — Change does not initiate a message
8	Function Block 41 Output — Change initiates a message	Function Block 41 Output — Change does not initiate a message	2	Function Block 35 Output — Change initiates a message	Function Block 35 Output — Change does not initiate a message
7	Function Block 40 Output — Change initiates a message	Function Block 40 Output — Change does not initiate a message	1	Function Block 34 Output — Change initiates a message	Function Block 34 Output — Change does not initiate a message
6	Function Block 39 Output — Change initiates a message	Function Block 39 Output — Change does not initiate a message	0	Function Block 33 Output — Change initiates a message	Function Block 33 Output — Change does not initiate a message
5	Function Block 38 Output — Change initiates a message	Function Block 38 Output — Change does not initiate a message	—	—	—

Parameter 25 — Set to Defaults

This parameter can be used to return the Bulletin 800E Station to the "out of the box" settings. This is the easiest way to clear an unwanted logic configuration. This device cannot be reset with logic running or with an I/O connection to the master. The default is No Action.

Table 4.W

Value	Function	Value	Function
0	No Action	1	Reset

Parameter 26 — Network Override

Enabling this parameter allows DeviceLogix to override normal output behavior in the case of a network fault. Network faults include Duplicate MAC ID failure and module Bus Off conditions. The default is 0 — Disable Network Override.

Table 4.X

Value	Function	Value	Function
0	Disable Network Override	1	Enable Network Override

Parameter 27 — Communication Override

Enabling this parameter allows DeviceLogix to override normal output behavior in the event of a communication status change. This includes all states where the module is without an I/O connection in the run state, which occurs if the I/O connection does not exist, has timed out, has been deleted, or is currently idle. The default is 0 — Disable Communication Override.

Table 4.Y

Value	Function	Value	Function
0	Disable Communication Override	1	Enable Communication Override

Parameter 28 — MAC ID Switch Changed

This is a read-only parameter used to determine whether the Node Address switches have been changed since the last power up. If the switches have been changed this bit will be set. The default is 0 — No Changes.

Table 4.Z

Value	Function	Value	Function
0	No changes	1	Switches have changed

Parameter 29 — Baud Rate Switch Changed

This is a read-only parameter used to determine whether the baud rate switch has been changed since the last power up. If the switch has been changed this bit will be set. The default is 0 — No Changes.

Table 4.AA

Value	Function	Value	Function
0	No changes	1	Switch has changed

Parameter 30 — MAC ID Switch Value

This is a read-only parameter used to identify the physical setting on the Node Address switches. This is helpful because the enclosure does not need to be opened. The default is 99.

Table 4.AB

Value	Function
0…99	Value of switches

Parameter 31 — Baud Rate Switch Value

This is a read-only parameter used to identify the physical setting on the baud rate switch. This is helpful because the enclosure does not need to be opened. The default is 9.

Table 4.AC

Value	Function
0…9	Value of switch

Parameters 32, 39, 46, and 53 — Output Value

This parameter is used to view the actual status of the output. In the absence of an I/O connection or DeviceLogix, it can also be used to set an output to test it. The default is 0 — Output Off.

Table 4.AD

Value	Function	Value	Function
0	Output Off	1	Output On

Parameters 33, 40, 47, and 54 — Output Status

This is a read-only parameter used to show the health status of individual outputs. A fault indicates a short circuit on the output. The default is 0 — Healthy.

Table 4.AE

Value	Function	Value	Function
0	Healthy	1	Faulted

Parameters 34, 41, 48, and 55 — Output Fault State

This parameter is used in conjunction with Parameters 35, 42, 49, and 56, respectively. It tells the station what to do with the output in the case of a fault state. If "Go to Fault Value" is selected, the device refers to the Output Fault Value parameter to determine the state. If "Hold Last State" is selected, the output stays in the last state. **If DeviceLogix is running, it will determine the state of the output.** The default value is 0 — Go to Fault Value.

Table 4.AF

Value	Function	Value	Function
0	Go to Fault Value	1	Hold Last State

Parameters 35, 42, 49, and 56 — Output Fault Value

This parameter is used in conjunction with Parameters 34, 41, 48, and 56, respectively. It tells the station what to do with the output in the case of a fault state. If "Go to Fault Value" is selected in the previous parameter, the device will set the output to the state selected here. **If DeviceLogix is running, it will determine the state of the output.** The default value is 0 — Off.

Table 4.AG

Value	Function	Value	Function
0	Off	1	On

Parameters 36, 43, 50, and 57 — Output Idle State

This parameter is used in conjunction with Parameters 37, 44, 51, and 58, respectively. It tells the station what to do with the output in the case of an idle state (an I/O connection exists, but the master is in program mode or idle state). If "Go to Idle Value" is selected, the device refers to the Output Idle Value parameter to determine the state. If "Hold Last State" is selected, the output stays in the last state. **If DeviceLogix is running, it will determine the state of the output.** The default value is 0 — Go to Idle Value.

Table 4.AH

Value	Function	Value	Function
0	Go to Idle Value	1	Hold Last State

Parameters 37, 44, 51, and 58 — Output Idle Value

This parameter is used in conjunction with Parameters 36, 43, 50, and 57, respectively. It tells the station what to do with the output in the case of a idle state. If "Go to Idle Value" is selected in the previous parameter, the device will set the output to the state selected here. **If DeviceLogix is running, it will determine the state of the output.** The default value is 0 — Off.

Table 4.AI

Value	Function	Value	Function
0	Off	1	On

Parameters 38, 45, 52, and 59 — Output Flash Rate

This parameter determines the flashing rate of the output. The default is 0 — No Flash.

Table 4.AJ

Value	Function
0	No Flash
1	0.6 Hz
2	2 Hz

Parameter 60 — DeviceNet Voltage

This read only parameter is used for monitoring the DeviceNet voltage at the node. The voltage reported via Parameter 60 may vary from actual voltage by up to 1V DC.

Parameter 61 — I/O Bus Voltage

This read-only parameter is used for monitoring the I/O bus voltage. If the bus voltage drops to less than 20V, a status bit is set and a minor fault is indicated. **Note:** Status bit and minor fault indicator are not latched and will be cleared when the bus voltage exceeds 20V.

I/O Configuration

The I/O messaging is set up by the master device through client/server connections at power-up. This device supports both Change-of-State (COS), cyclic, and Polled I/O messaging connections. The default I/O size is two input bytes and one output byte with a COS connection but, as explained in the Parameter Configuration, it is variable. The content of the data is also user selectable. Refer to Parameters 14…19 for data information and connection size. For actual bit information, you can further refer to Parameters 1…10.

As mentioned earlier, two inputs and one output are assigned per operator. For two- and three-hole enclosures, there are external I/O points available. The following table helps to explain this.

Table 4.AK

	Enclosure Type		
	2-Hole	**3-Hole**	**4-Hole**
Operator Position 1	IN0	IN0	IN0
	OUT0	OUT0	OUT0
	IN1	IN1	IN1
Operator Position 2	IN2	IN2	IN2
	OUT1	OUT1	OUT1
	IN3	IN3	IN3
Operator Position 3	IN4 ❶	IN4	IN4
	OUT2 ❶	OUT2	OUT2
	IN5 ❶	IN5	IN5
Operator Position 4	IN6 ❶	IN6 ❶	IN6
	OUT3 ❶	OUT3 ❶	OUT3
	IN7 ❶	IN7 ❶	IN7

❶ This I/O point is available for external use through connectors.

Table 4.AL explains how the external I/O maps to the hardware inputs, hardware outputs and I/O fault status words. Table 4.AM gives a cross-reference to the I/O connector pinout. For connector pinout diagrams, refer to Chapter 1 — Overview of DeviceNet Push Button Stations (I/O Connectors).

Table 4.AL

	I/O Mapping							
	Hardware Inputs and Outputs						I/O Fault Status	
External I/O Version	**Input 4 IN4**	**Input 5 IN5**	**Input 6 IN6**	**Input 7 IN7**	**Output 2 OUT2**	**Output 3 OUT3**	**SSVA**	**SSVB**
A	—	—	INA	—	—	OUTA	SSV1	—
B	—	—	INA	—	—	OUTA	SSV1	—
C	—	—	INA	INB	—	—	SSV1	—
D	—	—	—	—	OUTA	OUTB	—	—
E	—	—	—	—	OUTA	OUTB	—	—
F	—	—	—	—	—	—	—	—
G	—	—	—	—	—	—	—	—
H	INA	INB	INC	IND	—	—	SSV1	SSV2
J	INA	INB	—	—	OUTA	OUTB	SSV1	—
K	INA	INB	—	—	OUTA	OUTB	SSV1	—
L	—	—	INA	—	—	OUTA	SSV1	—
M	—	—	INA	—	—	OUTA	SSV1	—
N	—	—	INA	—	—	OUTA	SSV1	—
P	—	—	INA	—	—	OUTA	SSV1	—
Q	—	—	INA	INB	—	—	SSV1	—
R	—	—	INA	INB	—	—	SSV1	—
T	—	—	—	—	OUTA	OUTB	—	—
U	—	—	—	—	OUTA	OUTB	—	—
V	—	—	—	—	OUTA	OUTB	—	—
W	—	—	—	—	OUTA	OUTB	—	—
X	INA	INB	INC	—	OUTA	—	SSV1	SSV2
Y	INA	INB	INC	—	OUTA	—	SSV1	SSV2

Table 4.AM

	External I/O Connector Pinout									
	Connector A					Connector B				
External I/O Version	**Pin 1**	**Pin 2**	**Pin 3**	**Pin 4**	**Pin 5**	**Pin 1**	**Pin 2**	**Pin 3**	**Pin 4**	**Pin 5**
A	SSV1	OUTA	RTN	INA	24V DC	—	—	—	—	—
B	SSV1	OUTA	RTN	INA	—	—	—	—	—	—
C	SSV1	INB	RTN	INA	—	—	—	—	—	—
D	24V DC	OUTB	—	OUTA	—	—	—	—	—	—
E	—	OUTB	RTN	OUTA	—	—	—	—	—	—
F	NC-C1	NC-C2	NC-C2	NC-C1	—	—	—	—	—	—
G	NC1-C1	NC1-C2	NC2-C1	NC2-C2	—	—	—	—	—	—
H	SSV1	INB	RTN	INA	—	SSV2	IND	RTN	INC	—
J	SSV1	INB	RTN	INA	—	24V DC	OUTB	—	OUTA	—
K	SSV1	INB	RTN	INA	—	—	OUTB	RTN	OUTA	—
L	SSV1	OUTA	RTN	INA	24V DC	NC-C1	NC-C2	NC-C2	NC-C1	—
M	SSV1	OUTA	RTN	INA	—	NC-C1	NC-C2	NC-C2	NC-C1	—
N	SSV1	OUTA	RTN	INA	24V DC	NC1-C1	NC1-C2	NC2-C1	NC2-C2	—
P	SSV1	OUTA	RTN	INA	—	NC1-C1	NC1-C2	NC2-C1	NC2-C2	—
Q	SSV1	INB	RTN	INA	—	NC-C1	NC-C2	NC-C2	NC-C1	—
R	SSV1	INB	RTN	INA	—	NC1-C1	NC1-C2	NC2-C1	NC2-C2	—
T	24V DC	OUTB		OUTA	—	NC-C1	NC-C2	NC-C2	NC-C1	—
U	—	OUTB	RTN	OUTA	—	NC-C1	NC-C2	NC-C2	NC-C1	—
V	24V DC	OUTB	—	OUTA	—	NC1-C1	NC1-C2	NC2-C1	NC2-C2	—
W	—	OUTB	RTN	OUTA	—	NC1-C1	NC1-C2	NC2-C1	NC2-C2	—
X	SSV1	INB	RTN	INA	—	SSV2	OUTA	RTN	INC	24V DC
Y	SSV1	INB	RTN	INA	—	SSV2	OUTA	RTN	INC	—

Troubleshooting and Maintenance

Chapter Objectives

Table 5.A

Preventive Maintenance

- Prevent accumulation of dust and dirt by:
  - Keeping the enclosure and operators clean
  - Keeping the cover closed
- Periodically check for loose connections

ATTENTION

To avoid shock hazard, remove incoming power before checking connections.

Using the Mod/Net Status LED

Table 5.B Mod/Net Status LED

Mod/Net State	LED	Indication
Not powered/not on-line	Off	Device is not on-line. • Device has not completed the Dup MAC ID test. • Device may not be powered.
Device operational **and** on-line, connected	Solid green	Device is operating in a normal condition and is on-line with connections in the established state. • For Group 2 only, the device is allocated to a master.
Device operational **and** on-line, not connected, **or** device on-line **and** needs commissioning	Flashing green	Device is on-line with no connections in the established state. • Device has passed the Dup MAC ID test, is on-line, but has no established connections to other nodes. • For a Group 2 Only device, the device is not allocated to a master.
Minor fault and/or connection time-out	Flashing red	Recoverable fault and/or one or more I/O connections are in the timed-out state. Recoverable faults include: • Failed Power Supply power-up test • Faulted 24V DC, Out2, Out3
Critical fault or critical link failure	Solid red	• Device has an unrecoverable fault and may need replacing. • Device has detected an error that has rendered it incapable of communication on the network (Dup MAC failure or Bus Off).

Using the Logic Status LED

Table 5.C Logic Status LED

Logic State	LED	Indication
DeviceLogix **not** enabled	Off	Logic is disabled. **Note:** Logic may be present on the device. This LED only reflects whether or not it is enabled.
DeviceLogix enabled	Solid green	Logic is enabled.
DeviceLogix enabled and forces enabled	Flashing green	Forces are enabled. **Note:** Logic is also enabled. Outputs are not forced unless logic is enabled.

Replacing a Pilot Lamp

Pilot lamps should not need to be replaced, because long life LEDs are used. However if one needs replacement, the following steps should be followed.

ATTENTION

To avoid electrical shock or unintended operation of the equipment, remove incoming power before servicing.

1. Remove lens cap from the operator.
2. Remove the lamp from the socket. If necessary, use a lamp removal tool (Cat. No. 800E-ALR1).

ATTENTION

Do not use a screwdriver or other metal object to remove lamp.

3. Carefully insert new lamp in socket.

ATTENTION

- Use only 24V LEDs.
- Before replacing the lens cap, be sure that the lamp is properly seated or a short circuit may result.

4. Replace the lens cap.
5. Apply power and check for proper operation.

DeviceLogix

Chapter Objectives

Table 6.A

Overview

The Bulletin 800E Station has integrated DeviceLogix Component Technology. DeviceLogix allows very fast, simple process control. An example application may be a push button station that is being used to jog a slide. The use of DeviceLogix gives a local response time of approximately 1.2 ms versus 15.5 ms using a centralized PLC that is Polling the station (for more information, refer to the DeviceLogix White Paper, available for download at **http://www.ab.com/DeviceLogix**). The external I/O can be configured to turn on/off at the push of a button and get much more accurate response.

Also with DeviceLogix, users now have the option of executing a more complex sequence of actions upon the detection of a fault. These actions can be used to provide a more controlled shutdown of some portion of the control system's process. This provides an additional level of reliability and fault tolerance in systems.

Enabling DeviceLogix

If a DeviceLogix configuration is enabled it will run in the following circumstances:

- When an I/O connection with a master is present
- In the case of a network fault and Parameter 26 is enabled (refer to Parameter 26)
- There is no I/O connection and Parameter 27 is enabled (refer to Parameter 27)

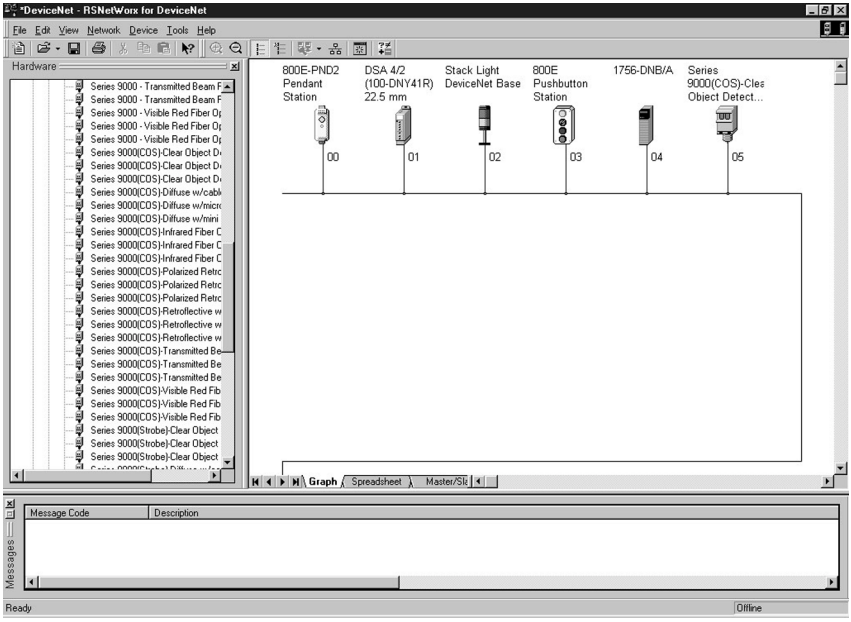
It is important to understand that when a DeviceLogix configuration is enabled, DeviceLogix has control of the hardware outputs. It supersedes the commands of the master or of an explicit message. Any mapping in the master to hardware outputs will be transferred automatically to Network Inputs. For more information on this, refer to Chapter 4 — Operations, Parameters 4 and 14.

DeviceLogix configurations are stored in non-volatile memory and will be retained through power cycles. However, I/O, timer, and counter values are stored in volatile memory and are lost on a power cycle. The exception to this is Forces, which are stored in non-volatile memory.

Logic Editor

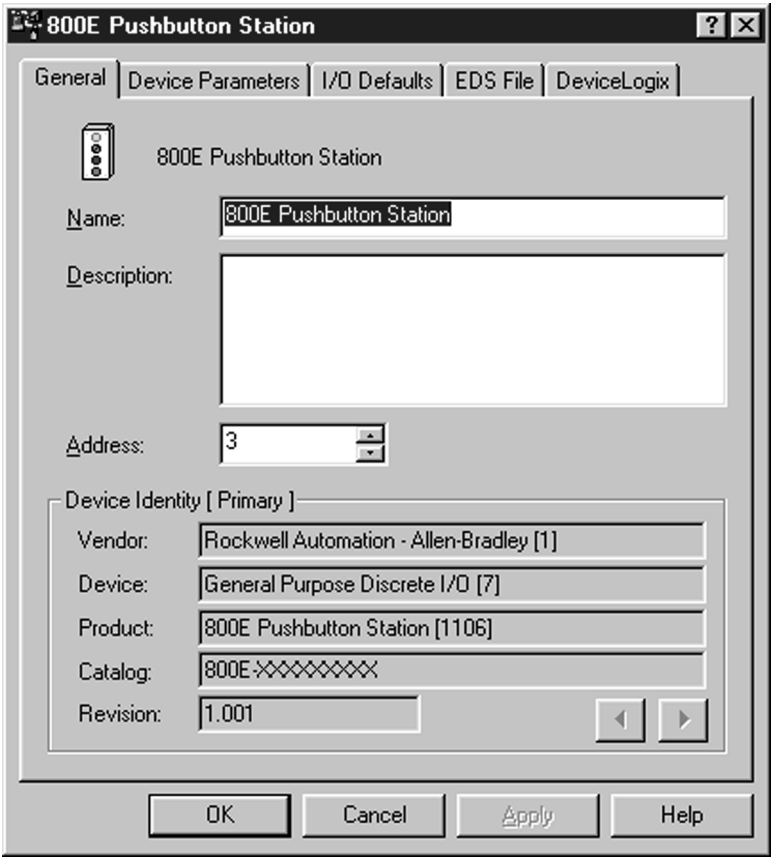
To access the DeviceLogix configuration tool, execute the following steps in RSNetWorx for DeviceNet. **Note:** Version 3.0 or later is needed to have the Logic Editor Installed.

Figure 6.1



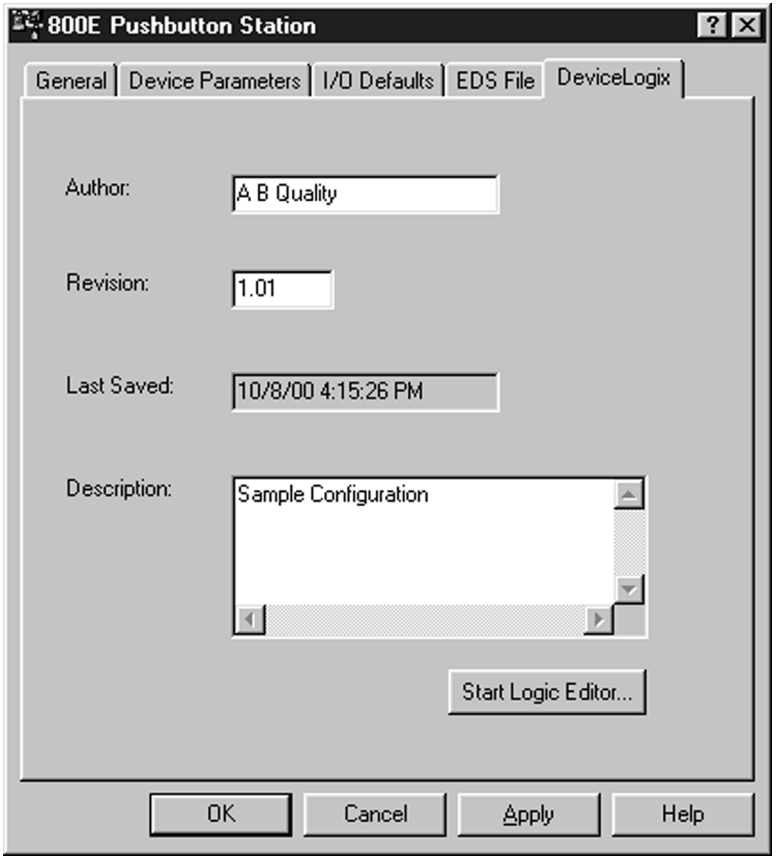
From an online view in RSNetWorx, double-click the Bulletin 800E Station.

Figure 6.2



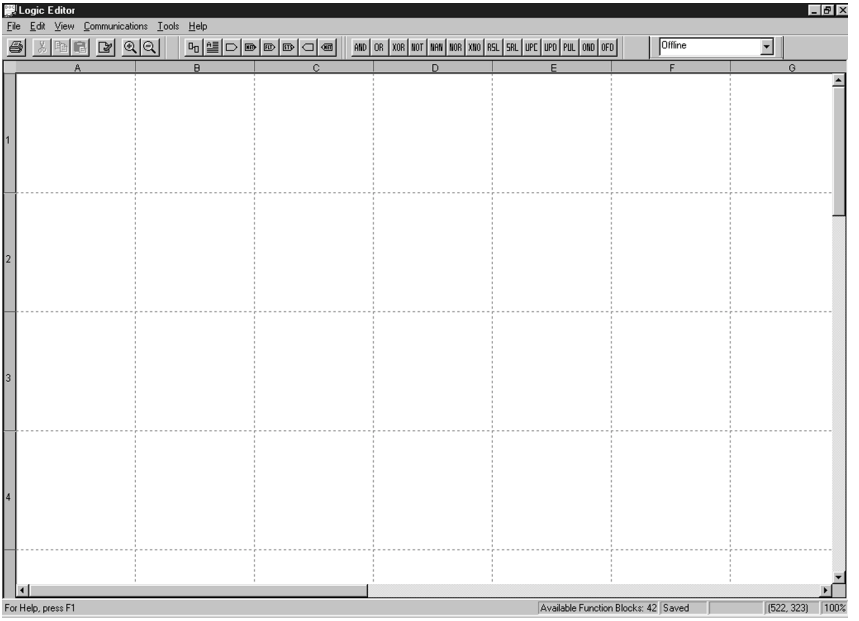
Click the **DeviceLogix** tab. This is where configuration description, author and revision data are updated.

Figure 6.3



To start the Logic Editor, click the *Start Logic Editor* button. A blank editor appears.

Figure 6.4

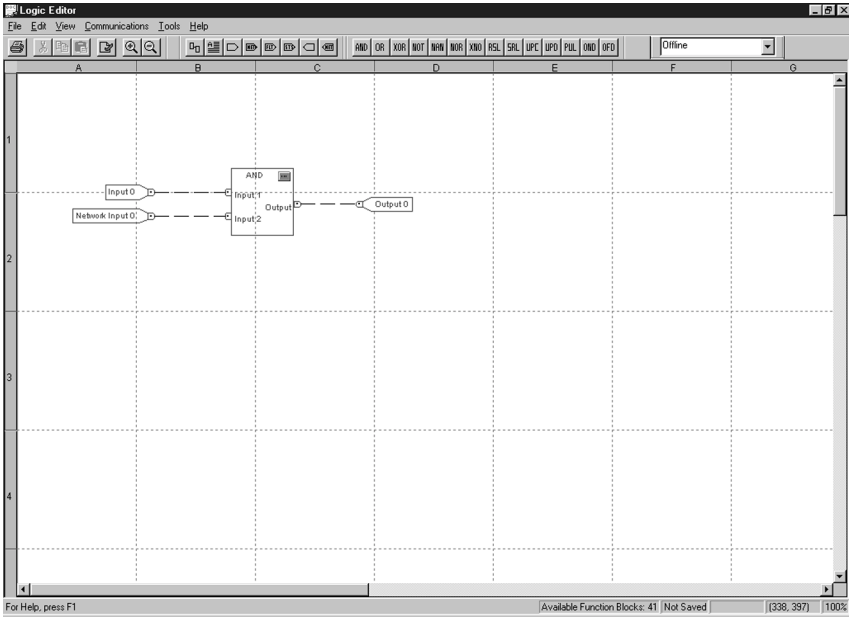


To create a configuration, refer to Sample Configuration.

Sample Configuration

The following steps will show how to create a simple configuration. At the end of the process the screen should look like this.

Figure 6.5



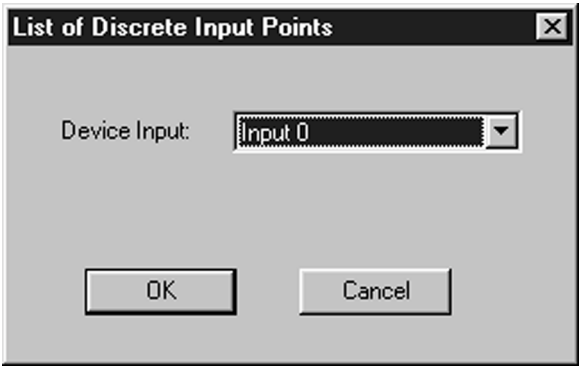
1. In the blank editor, click the *AND* button. 

2. Move the cursor into the grid and click to drop the function onto the grid.

3. Click the *Discrete Input* button. 

4. The list of *Hardware Inputs* dialog box appears. This list shows how many inputs are available to be placed in the logic configuration. Since the Bulletin 800E Station has eight inputs, there are eight options in the list starting with input 0. Select "Input 0", then click *OK*.

Figure 6.6

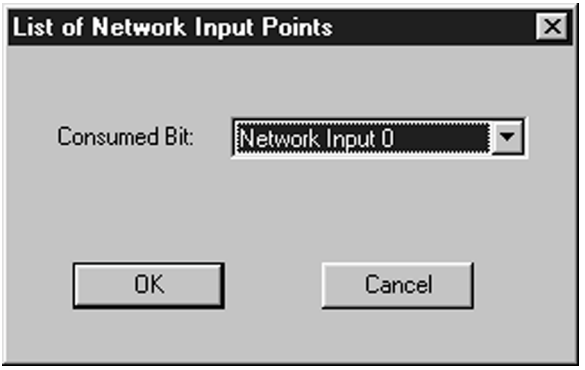


5. Put the image to the left of the AND function block. To drop the input on the page, click the desired position.

6. Click the *Network Input* button. Remember from earlier explanations, this is actually data from the Master Output Image table. For more help, refer to Chapter 4 — Operations, Parameters 4 and 14.

7. Select "Network Input 0". Click *OK*.

Figure 6.7



8. Put Network Input 0 under Input 0.

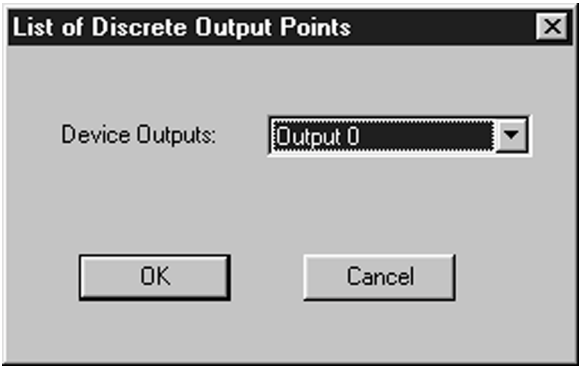
9. Put the mouse cursor over the tip of Input 0. The tip will turn green. Click the tip when it turns green.

10. A line will follow the cursor. Bring the line to the AND function block on Input Node 1 until it turns green. Click when it turns green.

11. Do the same for the Network Input and Input Node 2 on the AND function block.

12. Click the *Discrete Output* button. This is the hardware output of the station. Once this output is connected to a function block, neither the master nor the EDS file parameters directly control the status of the outputs, regardless of whether the logic is disabled or enabled.

Figure 6.8



13. Select "Output 0" from the *List of Hardware Outputs* box and click *OK*.
14. Place the output to the right of the AND function block.
15. Once again connect the output with a line to the AND function block output.
16. Go to the **Communications** menu and click *Download*.
17. Go to the **Communications** menu and click *Logic Enable On*.

The unit should now be running your DeviceLogix configuration, and the outputs will be controlled by the logic once the master is in Run Mode **or** Parameter 27 is enabled. Note that the Logic Status LED is solid green, signifying that DeviceLogix is active.

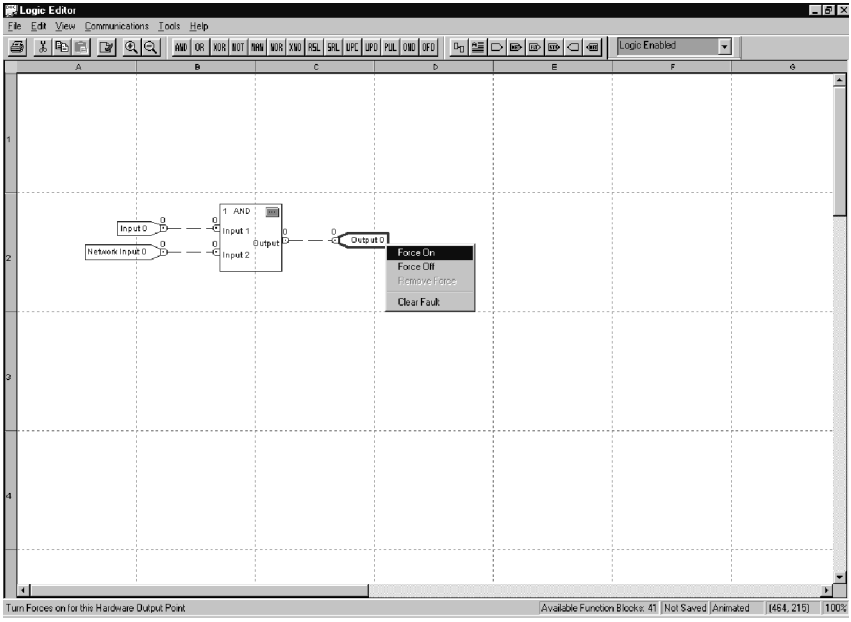
Forcing

ATTENTION

Only personnel familiar with DeviceNet devices and associated equipment should plan or implement the installation, startup, configuration, and subsequent maintenance of the Bulletin 800E Station. Forcing will turn on hardware and could cause operation of equipment and could lead to personal injury and/or equipment damage.

Forcing can be shown using the previous example configuration. Make sure that the configuration is downloaded and enabled. Right-click the *Output* function and select *Force On*.

Figure 6.9



The output has now turned on and the Logic Status LED has started flashing green. To remove the force, right-click again and select *Remove Force*. Inputs can also be forced to verify correct logic operation. I/O can also be forced off. Forces are stored in non-volatile memory and will be retained through a power cycle.

Off-Line Node Recovery

Chapter Objectives

Table 7.A

Overview

The Bulletin 800E Station is equipped with a function known as Off-Line Node Recovery. Off-Line Node Recovery is used mainly to commission a device on a network. When a new product is put on the network, it is at a default address of Node 63. If multiple units are placed on a network without first using node commissioning to change the node address a duplicate MAC ID error occurs. This means that more than one device is located at the same node address and only one of them is allowed online. Off-Line Node Recovery now allows you to recover the faulted devices and change the node address. This is a powerful tool because multiple nodes can be put on the network on installation and recovered one at a time without having to continually reset the network. The following section will walk through a sample recovery.

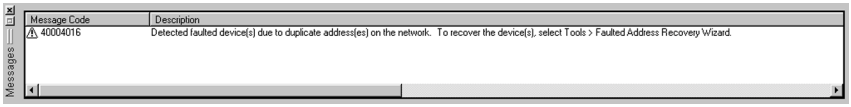
Note: If the MAC ID is set through the rotary switches, Off-Line Node Recovery will not be able to recover the faulted device because it cannot change the node address.

Sample Recovery

This example has placed two Bulletin 800E Stations on a network at the same node address 63.

From RSNetWorx, click the *Single Pass Browse* button. The following message will appear in the message box at the bottom of the screen.

Figure 7.1

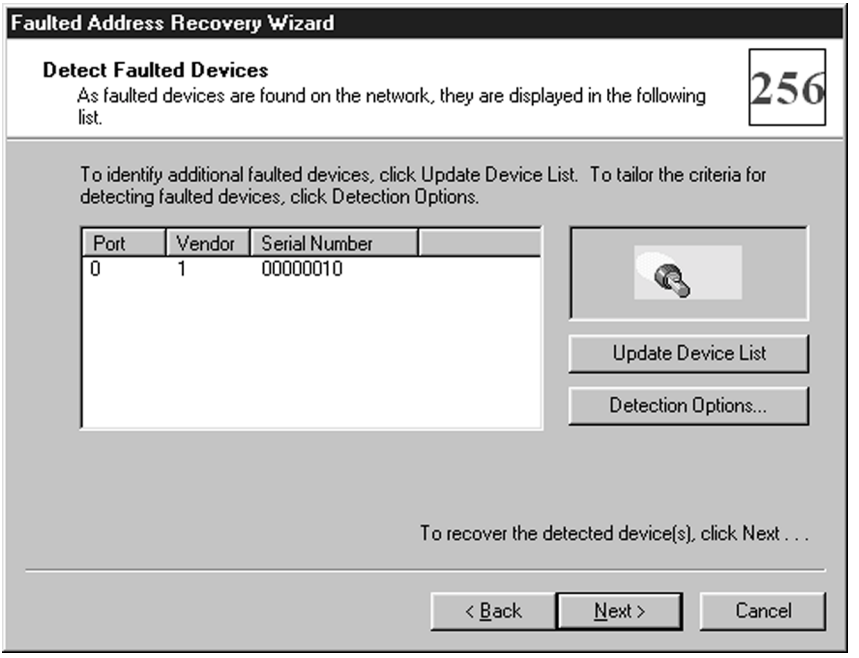


Select *Faulted Address Recovery Wizard* from the **Tools** menu.

Figure 7.2

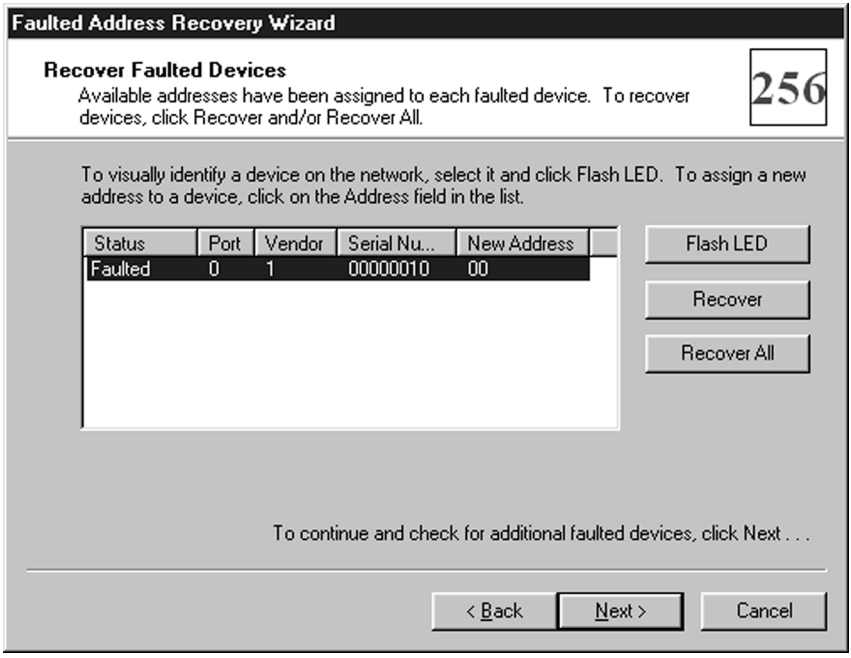
Click the *Next* button.

Figure 7.3



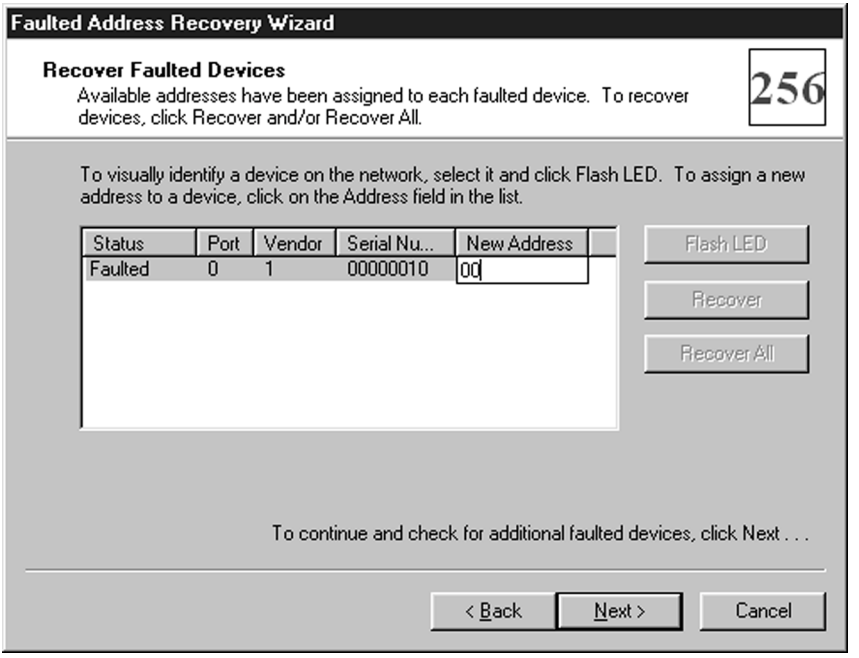
If there are multiple faulted devices, they will show up in the list. Devices are identified by the DeviceNet serial number that is unique to every product. The serial number for the Bulletin 800E Station can be located on the nameplate or inside the product. Click the *Next* button.

Figure 7.4



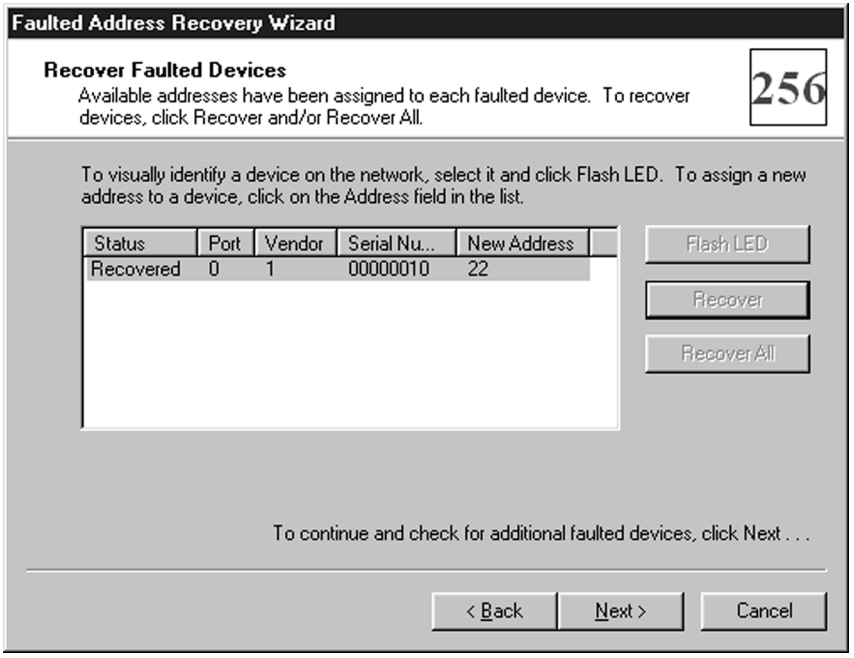
If there are multiple faulted units, you can verify which unit you are recovering by flashing the Mod/Net Status LED. To do this click *Flash LED*. The LED will flash between red and green. Click "00" under *New Address* to change the new address.

Figure 7.5



Change the address to the new address (for example, 22) and click *Recover*. Recovery is now complete.

Figure 7.6



For more information on Off-Line Node Recovery refer to the *RSNetWorx for DeviceNet User Manual* (Publication 1787-6.5.3).

Specifications

Table A.A Bulletin 800E Station Specifications

General Specifications		
Degree of Protection	IP66, NEMA Type 4/13	
Operating Ambient Temperature	–13…+131°F (–25…+55°C) Operating temperatures below 32°F (0°C) are based on the absence of freezing moisture and liquids.	
Storage Ambient Temperature	–40…+158°F (–40…+70°C)	
Vibration	10…2000 Hz, 1.52 mm displacement (peak-to-peak) max./2.5 G max.	
Shock	1/2 cycle sine wave for 11 ms at 15 G	
Relative Humidity	0…95%	
Certifications	UL, cUL, and CE compliant for all applicable directives. CE directives include EN50081-2, EN50082-2. This product is intended for use in an industrial environment.	
DeviceNet Specifications	**Max.**	**Min.**
DeviceNet Voltage (Class II Power Supply Required)	25V DC	11V DC
DeviceNet Current @ 24V DC ❶	930 mA @ max. load (1 sensor @ 50 mA, 2 outputs @ 300 mA)	< 150 mA (no-load operation)
External Input Specifications	**Max.**	**Min.**
Sensor Source Voltage/Current	26.5V/50 mA	23V/0 mA
External Inputs per Station	4: Dry contact or sinking/sourcing devices	0
On-State Current	13 mA nominal	
External Output Specifications	**Max.**	**Min.**
Output Auxiliary Voltage	26.5V	23.5V
On-State Voltage Drop	0.5V	—
On-State Current (continuous)	300 mA per output, 500 mA per station (total)	—
Off-State Leakage	0.05 mA	—
External E-Stop Specifications	**Max.**	**Min.**
Voltage	250V	—
Switching Current per Contact Block	3 A	—

❶ Refer to Figure 1.1 and Figure 1.2, thermal derating curves for external outputs at low DeviceNet voltages.

Figure 1.1 Minimum DeviceNet Voltage vs. Temperature for Maximum External Load

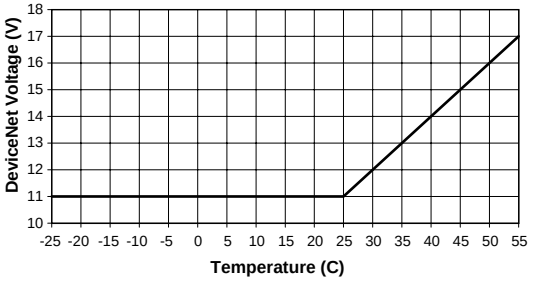
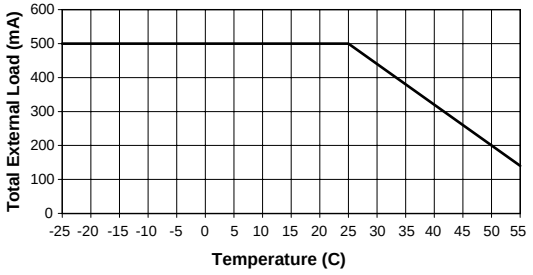


Figure 1.2 Maximum External Load vs. Temperature for Minimum DeviceNet Voltage



Note: Refer to the *22 mm Push Button Selection Guide* (Publication 800E-SG001A-US-P) or the Industrial Controls Catalog (Publication A113) for more information.

Cat. No. Explanation

Figure B.1 Vertical Station

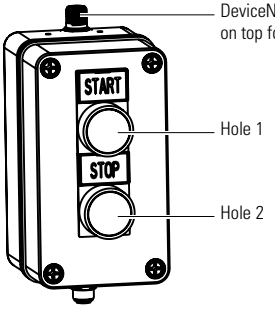
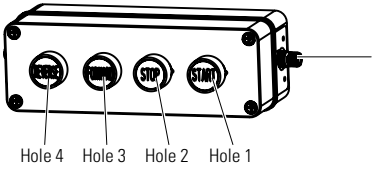


Figure B.2 Horizontal Station



800E ___ ___ ___ ___ ___ ___ ___ ***(Two-Hole)***

a b c d c d e

(Hole One) *c + d* (Hole Two) *c + d*

800E ___ ___ ___ ___ ___ ___ ___ ___ ___ ***(Three-Hole)***

a b c d c d c d e

(Hole One) *c + d* (Hole Two) *c + d* (Hole Three) *c + d*

800E ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ***(Four-Hole)***

a b c d c d c d c d e

(Hole One) *c + d* (Hole Two) *c + d* (Hole Three) *c + d* (Hole Four) *c + d*

a

Orientation	
Code	**Description**
V	Vertical ❶
H	Horizontal

b

Enclosure Style/Legends ❷	
Code	**Description**
A	2-Hole/with Legend Frame
B	3-Hole/with Legend Frame
C	4-Hole/with Legend Frame
D	2-Hole/No Legend Frame
E	3-Hole/No Legend Frame
F	4-Hole/No Legend Frame
G	2-Hole/E-Stop Only with Legend Frame ❸
H	2-Hole/E-Stop Only No Legend Frame ❸

c

Operator Types	
Code	**Description**
A	Non-Illuminated Flush Push Button (800EP-F*)
B	Non-Illuminated Extended Push Button (800EP-E*)
C	Non-Illuminated Guarded Push Button (800EP-G*)
D	Illuminated Flush Push Button (800EP-LF*)
E	Illuminated Extended Push Button (800EP-LE*)
F	Illuminated Guarded Push Button (800EP-LG*)
G	Non-Illuminated 2-Position Maintained Selector (800EP-SM2*)
H	Non-Illuminated 3-Position Maintained Selector (800EP-SM3*)
J	Optically Enhanced Pilot Light (800EP-PL*)
K	Non-Illuminated E-Stop Twist-to-Release, Push/Pull (800EP-MT4) ❹❺
L	Non-Illuminated E-Stop Twist-to-Release (800EP-MTS44) ❹❺
M	Non-Illuminated 2-Position Push/Pull Operator (800ES-MP2*) ❹
N	2-Position Low Profile Key Selector (800EP-KM2R3) ❻
P	3-Position Low Profile Key Selector (800EP-KM3R3) ❻
Q	Non-Illuminated Flush Alternate Action Push Button (800EP-FA*)
R	Non-Illuminated Momentary Mushroom 40 mm Push Button (800EP-M*)
T	Non-Illuminated E-Stop Key Release (800EP-MKR44) ❹❺
U	Non-Illuminated 3-Position Push/Pull Operator (800ES-MP3R*)
V	Illuminated Flush Alternate Action Push Button (800EP-LFA*)
W	Illuminated 2-Position Push/Pull Operator (800ES-LMP2*)
X	Illuminated 2-Position Maintained Selector (800EP-LSM2*)
Y	Illuminated 3-Position Maintained Selector (800EP-LSM3*)
Z	Illuminated Momentary Mushroom 40 mm Push Button (800ES-LM*)

❶ Selector Switches in a vertical mount enclosure will be mounted with a horizontal orientation.
❷ Legend Frame provided is 800E-120; legend insert needs to be ordered separately.
❸ Enclosure Style/Legend options G and H from Table b can only select one operator from Table c. Valid options are K, L, M, and T. Also refer to footnote ❹ below.
❹ Operator Types K, L, M and T from Table c may be used as Emergency Stops. To be valid as an E-Stop, the operators must use Color/Text option 4 from Table d and it must be placed in the last hole position in the enclosure. An E-Stop connector also must be chosen from Table e. Also see footnote ❹, page B-3.
❺ Operator Types K, L, and T from Table c only available in red — Color/Text Option 4 from Table d.
❻ Operator Types N and P from Table c must select Color/Text option **X** from Table d.

d

Color/Text	
Code	**Description**
1	White
2	Black
3	Green
4	Red
5	Yellow
6	Blue
7	Clear
8	Gray
9	No Cap
A	Start (Green Background/White Text) ❶
B	Stop (Red Background/White Text) ❶
C	Forward (Black Background/White Text) ❶
D	Reverse (Black Background/White Text) ❶
E	Up (Black Background/White Text) ❶
F	Down (Black Background/White Text) ❶
G	1 (Green Background/White Text) ❶
H	0 (Red Background/White Text) ❶
J	On (Green Background/White Text) ❶
K	Off (Red Background/White Text) ❶
L	Reset (Blue Background/White Text) ❶
X	N/A (Key Selector Switch) ❷

e

External I/O Version ❸	
Code	**Description**
A	1 input/1 output (Sinking)
B	1 input/1 output (Sourcing)
C	2 input
D	2 output (Sinking)
E	2 output (Sourcing)
F	1 E-Stop Block ❹
G	2 E-Stop Blocks ❹
H	2 input + 2 input
J	2 input + 2 output (Sinking)
K	2 input + 2 output (Sourcing)
L	1 input/1 output (Sinking) + 1 E-Stop Block ❹
M	1 input/1 output (Sourcing) + 1 E-Stop Block ❹
N	1 input/1 output (Sinking) + 2 E-Stop Blocks ❹
P	1 input/1 output (Sourcing) + 2 E-Stop Blocks ❹
Q	2 input + 1 E-Stop Block ❹
R	2 input + 2 E-Stop Blocks ❹
T	2 output (Sinking) + 1 E-Stop Block ❹
U	2 output (Sourcing) + 1 E-Stop Block ❹
V	2 output (Sinking) + 2 E-Stop Blocks ❹
W	2 output (Sourcing) + 2 E-Stop Blocks ❹
X	2 input + 1 input/1 output (Sinking)
Y	2 input + 1 input/1 output (Sourcing)

❶ Legended color cap options A…L from Table d can only be used with Operator Type options A, B, and C from Table c.

❷ Operator Types N and P from Table c must select Color/Text option **X** from Table d.

❸ This is an 8-in/ 4-out device. 2-in and 1-out are assigned to each hole position in the enclosure. If a 2-hole enclosure is selected, 4-in and 2-out are assigned internally and up to 4 unassigned I/O points can be assigned to external connectors. This device contains up to two physical external I/O connectors. The "+" symbol in the Description field of Table e indicates that two external connectors exist. If an E-Stop connector is used, 2 unassigned I/O points can be assigned to the other connector.

❹ External I/O Versions F, L, M, Q, T and U receive only one contact block for the external E-Stop string. These connectors are rated to 3 A. If more than 3 A of current is needed or if there are two E-Stop strings, use External I/O Versions G, N, P, R, V and W. These versions receive two contact blocks. This allows for 6 A of switching or for two E-Stop strings.

DeviceNet Information

General Information

The Bulletin 800E-xx (Multifunction I/O) device operates as a slave on the DeviceNet network. The unit supports Explicit Messages and COS, cyclic, and Polled I/O Messages of the predefined master/slave connection set. It does not support the Explicit Unconnected Message Manager (UCMM).

The device supports four discrete outputs and eight discrete inputs.

Message Types

As a group 2 slave device, the Bulletin 800E-xx supports the following message types.

Table C.1 Supported Message Types

CAN Identifier	Group 2 Message Type
10xxxxxx111	Duplicate MAC ID Check Messages
10xxxxxx110	Unconnected Explicit Request Messages
10xxxxxx101	Master I/O Poll Command Message
10xxxxxx100	Master Explicit Request Message

xxxxxx = Node Address

Class Services

As a group 2 slave device, the Bulletin 800E-xx supports the following class services and instance services.

Table C.2 Class Services

Service Code	Service Name	Service Code	Service Name
14 (0x0E)	Get_Attribute_Single	75 (0x4B)	Allocate Group 2 Identifier Set
16 (0x10)	Set_Attribute_Single	76 (0x4C)	Release Group 2 Identifier Set

Object Classes

Objects with common attributes are members of the same class. A particular occurrence of an object is called an instance of that class. The class and instance identifier within a DeviceNet connection message will identify exactly what object is being referenced. In an effort to remain compatible with other DeviceNet devices, the DeviceNet implementation for the Push Button Station follows standard definitions of objects. The classes listed below will be supported by the Bulletin 800E Station.

This object is used to provide identification and general information about the module. This object must be supported per the DeviceNet specification. There will only be one instance of this object. Attributes such as the vendor id, serial number, or product revision will be maintained by this object.

The following object classes will be supported.

Table 3.C

Class	Object	Class	Object
0x0001	Identity	0x002B	Acknowledge Handler
0x0002	Message Router	0x00B4	DeviceNet Interface Object
0x0003	DeviceNet	0x0307	Boolean Function Block
0x0004	Assembly	0x0308	Bistable Function Block
0x0005	Connection	0x0309	Counter Function Block
0x0008	Discrete Input Point	0x030A	Timer Function Block
0x0009	Discrete Output Point	0x030E	Logic Supervisor
0x001D	Discrete Input Group	0x030F	Produced Network Data
0x001E	Discrete Output Group	—	—

Class Code 0x0001: Identity Object

None of the optional class attributes of the Identity Object will be supported.

A single instance (instance 1) of the Identity Object will be supported. The following instance attributes will be supported.

Table C.4

Attribute ID	Access Rule	Name	Data Type	Value
1	Get	Vendor	UINT	1
2	Get	Device Type	UINT	7
3	Get	Product Code	UINT	1106 800E-H(V)4A4A4A4A
4	Get	Revision Major Revision Minor Revision	Structure of: USINT USINT	 1 1
5	Get	Status	WORD	0 = not owned 1 = owned by master
6	Get	Serial Number	UDINT	unique number for each device
7	Get	Product Name String Length ASCII String	Structure of: USINT STRING	 23 "800E Pushbutton Station"
9	Get	Configuration Consistency Value	UINT	Unique value depending on output of the parameter checksum algorithm.

The following common services will be implemented for the Identity Object.

Table C.5

Service Code	Implemented for:		Service Name
	Class	Instance	
0x0E	No	Yes	Get_Attribute_Single
0x05	No	Yes	Reset

Class Code 0x0002: Message Router Object

No class or instance attributes will be supported. The message router object exists only to rout explicit messages to other objects.

Class Code 0x0003: DeviceNet Object

The following class attributes will be supported for the DeviceNet Object:

Table C.6

Attribute ID	Access Rule	Name	Data Type	Value
1	Get	Revision	UINT	2

A single instance (instance 1) of the DeviceNet Object will be supported. The following instance attributes will be supported.

Table C.7

Attribute ID	Access Rule	Name	Data Type	Value
1	Get/Set	Node Address	USINT	0…63
2	Get/Set	Baud Rate	USINT	0 = 125 K 1 = 250 K 2 = 500 K
5	Get	Allocation Info Allocation Choice Master Node Addr	Structure of: BYTE USINT	 Allocation_byte ❶ 0…63 = address 255 = unallocated
6	Get	MAC ID Switch Changed	BOOL	0 = No Change 1 = Change since last Reset or Power-Up
7	Get	Baud Rate Switch Changed	BOOL	0 = No Change 1 = Change since last Reset or Power-Up
8	Get	MAC ID Switch Value	USINT	0…99 0…63 Hardware Set 64…99 Software Configurable
9	Get	Baud Rate Switch Value	USINT	0…9 0…2 Hardware Set 3…9 Software Configurable
100	Get/Set	Autobaud Enable	BOOL	0 = Disable 1 = Enable

❶ Allocation_byte

bit 0	Explicit messaging
bit 1	Polled I/O
bit 4	COS I/O
bit 5	Cyclic I/O
bit 6	Acknowledge Suppression

The following services will be implemented for the DeviceNet Object.

Table C.8

Service Code	Implemented for:		Service Name
	Class	Instance	
0x0E	Yes	Yes	Get_Attribute_Single
0x10	No	Yes	Set_Attribute_Single
0x4B	No	Yes	Allocate_Master/Slave _Connection_Set
0x4C	No	Yes	Release_Master/Slave _Connection_Set

Class Code 0x0004: Assembly Object

The following class attributes will be supported for the Assembly Object:

Table C.9

Attribute ID	Access Rule	Name	Data Type	Value
2	Get	Max Instance	UINT	188

Output Assemblies

The following Output Assembly Instances will be implemented.

Instance 33 (Output Assembly used by 8-in/4-out devices)

Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	—	—	—	—	Out3	Out2	Out1	Out0

Table C.10 Instance 183 (Network Inputs)

Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	Net In 7	Net In 6	Net In 5	Net In 4	Net In 3	Net In 2	Net In 1	Net In 0
1	Net In 15	Net In 14	Net In 13	Net In 12	Net In 11	Net In 10	Net In 9	Net In 8

The following table indicates the I/O Assembly Data Attribute mapping for Output Assemblies.

Table C.11

Data Component Name	Class		Instance Number	Attribute	
	Name	Number		Name	Number
Out1	Discrete Output Point	09_{hex}	1	Out1	3
Out2	Discrete Output Point	09_{hex}	2	Out2	3
Out3	Discrete Output Point	09_{hex}	3	Out3	3
Out4	Discrete Output Point	09_{hex}	4	Out4	3
Network Inputs	None (map to standard bit table)	—	—	—	—

Input Assemblies

The following input Assembly Instances will be implemented.

Table C.12 Instance 4 (Input Assembly used by 8-in/4-out devices)

Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	Input7	Input6	Input5	Input4	Input3	Input2	Input1	Input0

Table C.13 Instance 100 (Custom Parameter Based Input Assembly

Word	Byte	Value
0	0	Value of parameter pointed to by Word 0 Param (parameter instance 16) (low byte)
	1	Value of parameter pointed to by Word 0 Param (parameter instance 16) (high byte)
1	2	Value of parameter pointed to by Word 1 Param (parameter instance 17) (low byte)
	3	Value of parameter pointed to by Word 1 Param (parameter instance 17) (high byte)
2	4	Value of parameter pointed to by Word 2 Param (parameter instance 18) (low byte)
	5	Value of parameter pointed to by Word 2 Param (parameter instance 18) (high byte)
3	6	Value of parameter pointed to by Word 3 Param (parameter instance 19) (low byte)
	7	Value of parameter pointed to by Word 3 Param (parameter instance 19) (high byte)

Table C.14 Instance 101 (Input Assembly used by 8-in/4-out devices)

Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	Input7	Input6	Input5	Input4	Input3	Input2	Input1	Input0
1	0	0	0	Output 3 OK	Output 2 OK	24V DC OK	SSV2	SSV1

Table C.15 Instance 180 (Hardware Inputs)

Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	Input 7	Input 6	Input 5	Input 4	Input 3	Input 2	Input 1	Input 0
1	—	—	—	—	—	—	—	—

Table C.16 Instance 181 (Hardware Outputs)

Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	—	—	—	—	Output 3	Output 2	Output 1	Output 0
1	—	—	—	—	—	—	—	—

Table C.17 Instance 182 (IO Fault Status)

Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	0	0	0	Output 3 OK	Output 2 OK	24V DC OK	SSV2	SSV1
1	0	0	0	0	0	0	0	0

Table C.18 Instance 184 (Network Outputs)

Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	Net Out 7	Net Out 6	Net Out 5	Net Out 4	Net Out 3	Net Out 2	Net Out 1	Net Out 0
1	—	—	—	—	—	—	—	—

Table C.19 Instance 185 (Module Status)

Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	COS Message cnxn idle	Poll Message cnxn idle	COS Message cnxn fault	Poll Message cnxn fault	Explicit Message cnxn fault	COS Message cnxn exist	Poll Message cnxn exist	Explicit Message cnxn exist
1	—	—	—	—	—	24V DC power supply status	Minor fault	Network fault

Table C.20 Instance 186 (Function Block Outputs 1…16, Used for any DeviceLogix Device)

Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	FB 8	FB 7	FB 6	FB 5	FB 4	FB 3	FB 2	FB 1
1	FB 16	FB 15	FB 14	FB 13	FB 12	FB 11	FB 10	FB 9

Table C.21 Instance 187 (Function Block Outputs 17…32, Used for any DeviceLogix Device)

Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	FB 24	FB 23	FB 22	FB 21	FB 20	FB 19	FB 18	FB 17
1	FB 32	FB 31	FB 30	FB 29	FB 28	FB 27	FB 26	FB 25

Table C.22 Instance 188 (Function Block Outputs 33…42, Used for any DeviceLogix Device)

Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	FB 40	FB 39	FB 38	FB 37	FB 36	FB 35	FB 34	FB 33
1	—	—	—	—	—	—	FB 42	FB 41

The following table indicates the I/O Assembly Data Attribute mapping for Input Assemblies.

Table C.23

Data Component	Class		Instance	Attribute	
Name	**Name**	**Number**	**Number**	**Name**	**Number**
Input0	Discrete Input Point	08_{hex}	1	Value	3
Input1	Discrete Input Point	08_{hex}	2	Value	3
Input2	Discrete Input Point	08_{hex}	3	Value	3
Input3	Discrete Input Point	08_{hex}	4	Value	3
Input4	Discrete Input Point	08_{hex}	5	Value	3
Input5	Discrete Input Point	08_{hex}	6	Value	3
Input6	Discrete Input Point	08_{hex}	7	Value	3
Input7	Discrete Input Point	08_{hex}	8	Value	3
OutVal0	Discrete Output Point	09_{hex}	1	Value	3
OutVal1	Discrete Output Point	09_{hex}	2	Value	3
OutVal2	Discrete Output Point	09_{hex}	3	Value	3
OutVal3	Discrete Output Point	09_{hex}	4	Value	3
OutStat0	Discrete Output Point	09_{hex}	1	Status	4
OutStat1	Discrete Output Point	09_{hex}	2	Status	4
OutStat2	Discrete Output Point	09_{hex}	3	Status	4
OutStat3	Discrete Output Point	09_{hex}	4	Status	4

The following services will be implemented for the DeviceNet Object.

Table C.24

Service Code	Implemented for:		Service Name
	Class	**Instance**	
0x0E	Yes	Yes	Get_Attribute_Single
0x10	No	Yes	Set_Attribute_Single

Table C.25 Instance 177 (Config Assembly 8 in/4 out)

Byte	Parameter	Mapping
0	Autobaud	0xB4-01-15
1	Off-to-On Delay	0x1D-01-6
2	—	—
3	On-to-Off delay	0x1D-01-7
4	—	—
5	Input Assembly	0xB4-1-17
6	Output Assembly	0xB4-1-16
7	In Assy Word 0	0xB4-1-7
8	In Assy Word 1	0xB4-1-8
9	In Assy Word 2	0xB4-1-9
10	In Assy Word 3	0xB4-1-10
11	Input COS Mask	0xB4-1-13
12	—	—
13	Module COS Mask	0xB4-1-40
14	—	—
15	FB 1-16 COS Mask	0xB4-1-41
16	—	—
17	FB 17-32 COS Mask	0xB4-1-42
18	—	—
19	FB 33-42(48) COS Mask	0xB4-1-43
20	—	—
21	Set to Defaults	0xB4-1-19
22	Network Override	0x1E-1-104
23	Comms Override	0x1E-1-105
24	Out 0 Fault State	0x09-1-5
25	Out 0 Fault Value	0x09-1-6
26	Out 0 Idle State	0x09-1-7
27	Out 0 Idle Value	0x09-1-8
28	Out 0 Flash Rate	0x09-1-11
29	Out 1 Fault State	0x09-2-5
30	Out 1 Fault Value	0x09-2-6

Table C.25 Instance 177 (Config Assembly 8 in/4 out) (Continued)

Byte	Parameter	Mapping
31	Out 1 Idle State	0x09-2-7
32	Out 1 Idle Value	0x09-2-8
33	Out 1 Flash Rate	0x09-2-11
34	Out 2 Fault State	0x09-3-5
35	Out 2 Fault Value	0x09-3-6
36	Out 2 Idle State	0x09-3-7
37	Out 2 Idle Value	0x09-3-8
38	Out 2 Flash Rate	0x09-3-11
39	Out 3 Fault State	0x09-4-5
40	Out 3 Fault Value	0x09-4-6
41	Out 3 Idle State	0x09-4-7
42	Out 3 Idle Value	0x09-4-8
43	Out 3 Flash Rate	0x09-4-11

Class Code 0x0005: Connection Object

No class attributes will be supported for the Connection Object

Three instances of the Connection Object will be supported. Instance 1 will be the explicit message connection, instance 2 will be the polled IO connection, and instance 4 will be the COS/Cyclic IO connection.

Instance 1 is the Predefined Group 2 Connection Set Explicit Message Connection. The following instance 1 attributes will be supported:

Table C.26

Attribute ID	Access Rule	Name	Data Type	Value
1	Get	State	USINT	0 = nonexistent 1 = configuring 3 = established 4 = timed out
2	Get	Instance Type	USINT	0 = Explicit Message
3	Get	Transport Class Trigger	BYTE	0x83 — Server, Transport Class 3
4	Get	Produced Connection ID	UINT	10xxxxxx011 xxxxxx = node address
5	Get	Consumed Connection ID	UINT	10xxxxxx100 xxxxxx = node address
6	Get	Initial Comm Characteristics	BYTE	0x22
7	Get	Produced Connection Size	UINT	0x61
8	Get	Consumed Connection Size	UINT	0x61
9	Get/Set	Expected Packet Rate	UINT	In milliseconds
12	Get	Watchdog Action	USINT	01 = auto delete 03 = deferred delete
13	Get	Produced Connection Path Length	UINT	0
14	Get	Produced Connection Path	EPATH	Empty
15	Get	Consumed Connection Path Length	UINT	0
16	Get	Consumed Connection Path	EPATH	Empty

Instance 2 is the Predefined Group 2 Connection Set Polled I/O Message Connection. The following instance 2 attributes will be supported:

Table C.27

Attribute ID	Access Rule	Name	Data Type	Value
1	Get	State	USINT	0 = nonexistent 1 = configuring 3 = established 4 = timed out
2	Get	Instance Type	USINT	1 = I/O Connection
3	Get	Transport Class Trigger	USINT	0x82 — Server, Transport Class 2 (If alloc_choice ! = polled and ack suppression is enabled then value = 0x80)
4	Get	Produced Connection ID	UINT	01111xxxxxx xxxxxx = node address
5	Get	Consumed Connection ID	UINT	10xxxxxx101 xxxxxx = node address
6	Get	Initial Comm Characteristics	USINT	0x21
7	Get	Produced Connection Size	UINT	0…8
8	Get	Consumed Connection Size	UINT	0…8
9	Get/Set	Expected Packet Rate	UINT	In milliseconds
12	Get/Set	Watchdog Action	USINT	0 = transition to timed out 1 = auto delete 2 = auto reset
13	Get	Produced Connection Path Length	UINT	6
14	Get/Set	Produced Connection Path	—	8 in/4 out — 20 04 24 (assy inst #) 30 03
15	Get	Consumed Connection Path Length	UINT	6
16	Get/Set	Consumed Connection Path	—	8 in/4 out — 20 04 24 (assy inst #) 30 03

Instance 4 is the Predefined Group 2 Connection Set Change of State/Cyclic I/O Message Connection. The following instance 4 attributes will be supported:

Table C.28

Attribute ID	Access Rule	Name	Data Type	Value
1	Get	State	USINT	0 = nonexistent 1 = configuring 3 = established 4 = timed out
2	Get	Instance Type	USINT	1 = I/O Connection
3	Get	Transport Class Trigger	USINT	0x00 (Cyclic, unacknowledged) 0x03 (Cyclic, acknowledged) 0x10 (COS, unacknowledged) 0x13 (COS, acknowledged)
4	Get	Produced Connection ID	UINT	01101xxxxxx xxxxxx = node address
5	Get	Consumed Connection ID	UINT	10xxxxxx101 xxxxxx = node address
6	Get	Initial Comm Characteristics	USINT	0x01 (acknowledged) 0x0F (unacknowledged)
7	Get	Produced Connection Size	UINT	0…8
8	Get	Consumed Connection Size	UINT	0…8
9	Get/Set	Expected Packet Rate	UINT	In milliseconds
12	Get	Watchdog Action	USINT	0 = transition to timed out 1 = auto delete 2 = auto reset
13	Get	Produced Connection Path Length	UINT	6
14	Get	Produced Connection Path	—	8 in/4 out — 20 04 24 (assy inst #) 30 03
15	Get	Consumed Connection Path Length	UINT	4 (acknowledged) 0 (unacknowledged)
16	Get/Set	Consumed Connection Path	—	8 in/4 out — 20 04 24 (assy inst #) 30 03
17	Get/Set	Production Inhibit Time	UINT	In milliseconds

Instance 5 is the Group 1 Explicit Message Connection. The following instance 5 attributes will be supported:

Table C.29

Attribute ID	Access Rule	Name	Data Type	Value
1	Get	State	USINT	0 = nonexistent 1 = configuring 3 = established 4 = timed out
2	Get	Instance Type	USINT	0 = Explicit Message
3	Get	Transport Class Trigger	USINT	0x83 — Server, Transport Class 3
4	Get	Produced Connection ID	UINT	0????xxxxxx xxxxxx = node address
5	Get	Consumed Connection ID	UINT	0????xxxxxx xxxxxx = node address
6	Get	Initial Comm Characteristics	USINT	0x22
7	Get	Produced Connection Size	UINT	0x61
8	Get	Consumed Connection Size	UINT	0x61
9	Get/Set	Expected Packet Rate	UINT	In milliseconds
12	Get	Watchdog Action	USINT	01 = auto delete 03 = deferred delete
13	Get	Produced Connection Path Length	UINT	0
14	Get	Produced Connection Path	—	Empty
15	Get	Consumed Connection Path Length	UINT	0
16	Get	Consumed Connection Path	—	Empty

Instance 6 and 7 are the Group 3 Explicit Message Connections. The following instance 6 and 7 attributes will be supported:

Table C.30

Attribute ID	Access Rule	Name	Data Type	Value
1	Get	State	USINT	0 = nonexistent 1 = configuring 3 = established 4 = timed out
2	Get	Instance Type	USINT	0 = Explicit Message
3	Get	Transport Class Trigger	USINT	0x83 — Server, Transport Class 3
4	Get	Produced Connection ID	UINT	11???xxxxxx xxxxxx = node address
5	Get	Consumed Connection ID	UINT	11???xxxxxx xxxxxx = node address
6	Get	Initial Comm Characteristics	USINT	0x22
7	Get	Produced Connection Size	UINT	0x61
8	Get	Consumed Connection Size	UINT	0x61
9	Get/Set	Expected Packet Rate	UINT	In milliseconds
12	Get	Watchdog Action	USINT	01 = auto delete 03 = deferred delete
13	Get	Produced Connection Path Length	UINT	0
14	Get	Produced Connection Path	—	Empty
15	Get	Consumed Connection Path Length	UINT	0
16	Get	Consumed Connection Path	—	Empty

The following common services will be implemented for the Connection Object.

Table C.31

Service Code	Implemented for:		Service Name
	Class	Instance	
0x05	No	Yes	Reset
0x09	Yes	Yes	Delete
0x0E	No	Yes	Get_Attribute_Single
0x10	No	Yes	Set_Attribute_Single

Class Code 0x0008: Discrete Input Point Object

The following class attributes will be supported for the Discrete Input Point Object:

Table C.32

Attribute ID	Access Rule	Name	Data Type	Value
1	Get	Revision	UINT	2

Multiple instances of the Discrete Input Point Object will be supported. All instances will contain the following attributes.

Table C.33

Attribute ID	Access Rule	Name	Data Type	Value
3	Get	Value	BOOL	0 = OFF, 1 = ON
115	Get/Set	Force Enable	BOOL	0 = Disable, 1 = Enable
116	Get/Set	Force Value	BOOL	0 = OFF, 1 = ON

The following common services will be implemented for the Discrete Input Point Object.

Table C.34

Service Code	Implemented for:		Service Name
	Class	Instance	
0x0E	Yes	Yes	Get_Attribute_Single
0x10	No	Yes	Set_Attribute_Single

Class Code 0x0009: Discrete Output Point Object

No class attributes will be supported for the Discrete Input Object:

Multiple instances of the Discrete Output Point Object will be supported. All instances will contain the following attributes.

Table C.35

Attribute ID	Access Rule	Name	Data Type	Value
3	Get	Value	BOOL	0 = OFF, 1 = ON
4	Get	Status	BOOL	0 = OK, 1 = Faulted
5	Get/Set	Fault Action	BOOL	0 = Fault Value attribute, 1 = Hold Last State
6	Get/Set	Fault Value	BOOL	0 = OFF, 1 = ON
7	Get/Set	Idle Action	BOOL	0 = Fault Value attribute, 1 = Hold Last State
8	Get/Set	Idle Value	BOOL	0 = OFF, 1 = ON
11	Get/Set	Flash Rate	USINT	0 = No Flash, 1 = 0.6 Hz, 2 = 2 Hz
115	Get/Set	Force Enable	BOOL	0 = Disable, 1 = Enable
116	Get/Set	Force Value	BOOL	0 = OFF, 1 = ON
117	Get/Set	Input Binding	STRUCT: USINT Array of USINT	Size of appendix I encoded path Appendix I encoded path NULL path means attribute 3 drives the output. Otherwise, this is a path to a bit in the Standard Bit Table.

The following common services will be implemented for the Discrete Output Point Object.

Table C.36

Service Code	Implemented for:		Service Name
	Class	Instance	
0x0E	Yes	Yes	Get_Attribute_Single
0x10	No	Yes	Set_Attribute_Single

Class Code 0x001D: Discrete Input Group Object

This object maintains any attributes that apply to all instances of Discrete Input Points so they can be addressed as a group.

Table C.37

Attribute ID	Access Rule	Name	Data Type	Value
3	Get	Number of Instances	USINT	8
4	Get	Binding	UINT	—
5	Get	Status	BOOL	0 = OK, 1 = Faulted
6	Get/Set	Off_On_Delay	UINT	In microseconds (0…16,000)
7	Get/Set	On_Off_Delay	UINT	In microseconds (0…16,000)

The following common services will be implemented for the Parameters Object.

Table C.38

Service Code	Implemented for:		Service Name
	Class	Instance	
0x0E	No	Yes	Get_Attribute_Single
0x10	No	Yes	Set_Attribute_Single

Class Code 0x001E: Discrete Output Group Object

This object maintains any attributes that apply to all instances of Discrete Output Points so they can be addressed as a group.

Table C.39

Attribute ID	Access Rule	Name	Data Type	Value
3	Get	Number of Bound Instances	USINT	4
4	Get	Binding	UINT	—
5	Get/Set	Status	BOOL	0 = OK, 1 = Faulted
6	Get/Set	Command	UINT	0 = Idle, 1 = Run
104	Get/Set	Network Status Override	BOOL	0 = Override disabled 1 = Override enabled
105	Get/Set	Comms Status Override	BOOL	0 = Override disabled 1 = Override enabled

The following common services will be implemented for the Parameters Object.

Table C.40

Service Code	Implemented for:		Service Name
	Class	Instance	
0x0E	No	Yes	Get_Attribute_Single
0x10	No	Yes	Set_Attribute_Single

Class Code 0x002B: Acknowledge Handler Object

No class attributes will be supported for the Acknowledge Handler Object.

A single instance (instance 1) of the Acknowledge Handler Object will be supported. The following instance attributes will be supported.

Table C.41

Attribute ID	Access Rule	Name	Data Type	Value
1	Get/Set	Acknowledge Timer	UINT	ms
2	Get	Retry Limit	USINT	1
3	Get	COS Producing Connection Instance	UINT	4

The following common services will be implemented for the Acknowledge Handler Object.

Table C.42

Service Code	Implemented for:		Service Name
	Class	Instance	
0x0E	No	Yes	Get_Attribute_Single
0x10	No	Yes	Set_Attribute_Single

Class Code 0x00B4: DeviceNet Interface Object

This vendor-specific object will include no class attributes.

A single instance (instance 1) of the DeviceNet Interface Object will be supported. The following instance attributes will be supported.

Table C.43

Attribute ID	Access Rule	Name	Data Type	Min./ Max.	Default	Description
7	Get/Set	Assy Word 0 Param	USINT	0…10	1	Parameter number whose value is used as the first word in Input Assembly 100
8	Get/Set	Assy Word 1 Param	USINT	0…10	3	Parameter number whose value is used as the second word in Input Assembly 100
9	Get/Set	Assy Word 2 Param	USINT	0…10	5	Parameter number whose value is used as the third word in Input Assembly 100
10	Get/Set	Assy Word 3 Param	USINT	0…10	6	Parameter number whose value is used as the fourth word in Input Assembly 100
13	Get/Set	COS Mask	WORD	0… 0xFFFF	0xFFFF	Change of state mask for Hardware Inputs
15	Get/Set	AutobaudEnable	BOOL	0…1	1	1 = Enabled
16	Get/Set	Output Assembly	USINT	0…188	33	Output Assembly instance that is active
17	Get/Set	Input Assembly	USINT	0…188	101	Input Assembly instance that is active
19	Get/Set	Set To Defaults	BOOL	0…1	0	0 = No action; 1 = Reset
30	Get	DeviceNet Voltage	UINT	0…287	0	DeviceNet voltage supplied to 800E Station
31	Get	I/O Bus Voltage	UINT	0…287	0	Voltage supplied to I/O of 800E Station
40	Get/Set	Module COS Mask	WORD	0… 0xFFFF	0	Change of state mask for module status bits in the standard bit table
41	Get/Set	FB 1-16 COS Mask	WORD	0… 0xFFFF	0	Change of state mask for function block outputs 1…16
42	Get/Set	FB 17-32 COS Mask	WORD	0… 0xFFFF	0	Change of state mask for function block outputs 17…32
43	Get/Set	FB 33-42 COS Mask	WORD	0… 0xFFFF	0	Change of state mask for function block outputs 33…42

The following common services will be implemented for the DeviceNet Interface Object.

Table C.44

Service Code	Implemented for:		Service Name
	Class	Instance	
0x0E	No	Yes	Get_Attribute_Single
0x10	No	Yes	Set_Attribute_Single

Class Code 0x0307: Boolean Function Block Object

The following class attributes will be supported.

Table C.45

Attribute ID	Access Rule	Name	Data Type	Value
1	Get	Revision	UINT	1
8	Get	Member List	STRUCT of: USINT Array of USINT	 Number of created instances List of created instances

Up to 42 instances will be supported. The following instance attributes will be supported.

Table C.46

Attribute ID	Access Rule	Name	Data Type	Value
1	Set	Type	USINT	0 = Not Configured 1…4 = Reserved 5 = AND 6 = OR 7 = XOR 8 = NOT 9 = NAND 10 = NOR 11 = XNOR 12…255 = Not used
2	Set	Input Binding	STRUCT of USINT Array of: STRUCT of: USINT Array of EPATH BOOL	Number of Inputs Path Size Path (Symbolic paths to Standard Bit Table Entries) Compliment Flag
3	Get	Value	BOOL	0 = OFF 1 = ON

The following common services will be implemented.

Table C.47

Service Code	Implemented for:		Service Name
	Class	Instance	
0x08	Yes	No	Create
0x09	Yes	No	Delete
0x0E	Yes	Yes	Get_Attribute_Single
0x10	No	Yes	Set_Attribute_Single

Class Code 0x0308: Bistable Function Block Object

The following class attributes will be supported.

Table C.48

Attribute ID	Access Rule	Name	Data Type	Value
1	Get	Revision	UINT	1
8	Get	Member List	STRUCT of: USINT Array of USINT	 Number of created instances List of created instances

Up to 42 instances will be supported. The following instance attributes will be supported.

Table C.49

Attribute ID	Access Rule	Name	Data Type	Value
1	Set	Type	USINT	0 = Not Configured 1 = SR set dominant 2 = RS reset dominant 3…255 = not defined
2	Set	S Input Binding	STRUCT of: USINT Array of EPATH BOOL	 Path Size Path (Symbolic paths to Standard Bit Table Entries) Compliment Flag
3	Set	R Input Binding	STRUCT of: USINT Array of EPATH BOOL	 Path Size Path (Symbolic paths to Standard Bit Table Entries) Compliment Flag
4	Get	Value	BOOL	0 = OFF 1 = ON

The following common services will be implemented.

Table C.50

Service Code	Implemented for:		Service Name
	Class	Instance	
0x08	Yes	No	Create
0x09	Yes	No	Delete
0x0E	Yes	Yes	Get_Attribute_Single
0x10	No	Yes	Set_Attribute_Single

Class Code 0x0309: Counter Function Block Object

The following class attributes will be supported.

Table C.51

Attribute ID	Access Rule	Name	Data Type	Value
1	Get	Revision	UINT	1
8	Get	Member List	STRUCT of: USINT Array of USINT	 Number of created instances List of created instances

Up to 42 instances will be supported. The following instance attributes will be supported.

Table C.52

Attribute ID	Access Rule	Name	Data Type	Value
1	Get/Set	Type	USINT	0 = Not Configured 1= Up Counter 2 = Down Counter 3 = Up/Down Counter 4…255 = not defined
2	Get/Set	Count Up Input Binding	STRUCT of: USINT Array of EPATH BOOL	 Path Size Path (Symbolic paths to Standard Bit Table Entries) Compliment Flag
3	Get/Set	Reset Binding	STRUCT of: USINT Array of EPATH BOOL	 Path Size Path (Symbolic paths to Standard Bit Table Entries) Compliment Flag

Table C.52

Attribute ID	Access Rule	Name	Data Type	Value
5	Get/Set	Preset Value	UINT	default = 60000
6	Get	Output (Done Bit)	BOOL	0 = Counting 1 = Done
7	Get	Count Value	UINT	Counter Accumulator

The following common services will be implemented.

Table C.53

Service Code	Implemented for:		Service Name
	Class	Instance	
0x08	Yes	No	Create
0x09	Yes	No	Delete
0x0E	Yes	Yes	Get_Attribute_Single
0x10	No	Yes	Set_Attribute_Single

Class Code 0x030A: Timer Function Block Object

The following class attributes will be supported.

Table C.54

Attribute ID	Access Rule	Name	Data Type	Value
1	Get	Revision	UINT	1
8	Get	Member List	STRUCT of: USINT Array of USINT	 Number of created instances List of created instances

Up to 42 instances will be supported. The following instance attributes will be supported.

Table C.55

Attribute ID	Access Rule	Name	Data Type	Value
1	Set	Type	USINT	0 = Not Configured 1= Pulse Timer 2 = On-Delay Timer 3 = Off-Delay timer 4…255 = not defined
2	Set	Input Binding	STRUCT of: USINT Array of EPATH BOOL	 Path Size Path (Symbolic paths to Standard Bit Table Entries) Compliment Flag
4	Set	Preset Time	UINT	Default = 0
5	Get	Output	BOOL	—
6	Set	Reset Binding	STRUCT of: USINT Array of EPATH BOOL	 Path Size Path (Symbolic paths to Standard Bit Table Entries) Compliment Flag
7	Get	Elapsed Time	UINT	Timer accumulator.
8	Get/Set	Time Base	USINT	0 = 1 ms (default) 1 = 10 ms 2…255 = not defined

The following common services will be implemented.

Table C.56

Service Code	Implemented for:		Service Name
	Class	Instance	
0x08	Yes	No	Create
0x09	Yes	No	Delete
0x0E	Yes	Yes	Get_Attribute_Single
0x10	No	Yes	Set_Attribute_Single

Class Code 0x030E: Logic Supervisor Object

No class attributes will be supported.

A single instance (instance 1) will be supported. The following instance attributes will be supported.

Table C.57

Attribute ID	Access Rule	Name	Data Type	Value
1	Get/Set	Logic Enable	BOOL	0 = Logic Disabled 1 = Logic Enabled
2	Get	Data Table	Array of BYTE	The 20 byte Standard Bit Table

The following common services will be implemented for the Logic Supervisor Object.

Table C.58

Service Code	Implemented for:		Service Name
	Class	Instance	
0x08	No	Yes	Reset
0x0E	No	Yes	Get_Attribute_Single
0x10	No	Yes	Set_Attribute_Single

Class Code 0x030F: Produced Network Data Object

No class attributes will be supported

A single instance (instance 1) will be supported. The following instance attributes will be supported.

Table C.59

Attribute ID	Access Rule	Name	Data Type	Value
1	Get	Value	BOOL	Value of data pointed to by the binding attribute
2	Set	Binding	STRUCT of: USINT Array of EPATH BOOL	 Path size Path (Symbolic paths to Standard Bit Table Entries) Compliment Flag
3	Get	Data Type	USINT	4 = BOOL

The following common services will be implemented for the Produced Network Data Object.

Table C.60

Service Code	Implemented for:		Service Name
	Class	Instance	
0x0E	No	Yes	Get_Attribute_Single
0x10	No	Yes	Set_Attribute_Single

Notes:

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Americas Headquarters, 1201 South Second Street, Milwaukee, WI 53204, USA, Tel: (1) 414 382-2000, Fax: (1) 414 382-4444
European Headquarters SA/NV, avenue Herrmann Debroux, 46, 1160 Brussels, Belgium, Tel: (32) 2 663 06 00, Fax: (32) 2 663 06 40
Asia Pacific Headquarters, 27/F Citicorp Centre, 18 Whitfield Road, Causeway Bay, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

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