Preface

Introduction

Read this preface to become familiar with the organization of the manual. In this preface, you will read about the following:

- Who Should Use this Manual
- Purpose of this Manual
- Contents of this Manual
- Related Documentation
- Conventions Used in this Manual
- Allen-Bradley Support

Who Should Use this Manual

This manual is intended for qualified service personnel responsible for setting up and servicing the Ultra3000™ with DeviceNet™. You must have previous experience with and a basic understanding of electrical terminology, programming procedures, networking, required equipment and software, and safety precautions.

Purpose of this Manual

This manual is a reference guide for using DeviceNet to configure, monitor, or control Ultra3000 drives with DeviceNet operating with DeviceNet firmware version 2.*xx*.

Non-Indexing Ultra3000 Drives	Indexing Ultra3000 Drives
2098-DSD-005-DN	2098-DSD-005X-DN
2098-DSD-010-DN	2098-DSD-010X-DN
2098-DSD-020-DN	2098-DSD-020X-DN
2098-DSD-030-DN	2098-DSD-030X-DN
2098-DSD-075-DN	2098-DSD-075X-DN
2098-DSD-150-DN	2098-DSD-150X-DN
2098-DSD-HV030-DN	2098-DSD-HV030X-DN
2098-DSD-HV050-DN	2098-DSD-HV050X-DN
2098-DSD-HV100-DN	2098-DSD-HV100X-DN
2098-DSD-HV150-DN	2098-DSD-HV150X-DN
2098-DSD-HV220-DN	2098-DSD-HV220X-DN

Note: The reference guide to Ultra3000 drives with DeviceNet operating with firmware version 1.xx is listed in the section below entitled *Related Documentation*.

Contents of this Manual

This manual contains the following sections:

Chapter	Title	Contents
	Preface	An overview of this manual.
1	Overview	Describes network activity and drive configuration capabilities.
2	Programming Reference	Configuration data and behaviors implemented in the Ultra3000 Drive with DeviceNet are defined using object modeling

Related Documentation

These publications provide additional information specific to the Ultra3000 Drive with DeviceNet or DeviceNet in general. To obtain a copy, contact your local Rockwell Automation office or distributor, or access the documents on-line at **www.theautomationbookstore.com** or **www.ab.com/manuals/gmc**.

For information about:	Read this document:	Publication Number
A description of the Ultra3000 and Ultra5000™ drives	*Ultra Family Brochure*	2098-BR001*x*-EN-P
How to install Ultraware™	*Ultraware CD Installation Instructions*	2098-IN002*x*-EN-P
How to install and troubleshoot the Ultra3000 drive	*Ultra3000 Digital Servo Drive Installation Manual*	2098-IN003*x*-EN-P
Configure, monitor, or control Ultra3000 drives with DeviceNet operating with firmware version 1.xx	*Ultra3000 Series Digital Servo Drive with DeviceNet Firmware Version 1.xx Reference Manual*	2098-RM001*x*-EN-P
Configuring the Ultra3000 DSD and Ultra5000 IPD using Ultraware	*Ultraware User Manual*	2098-UM001*x*-EN-P
How to use RSNetWorx	*RSNetWorx for DeviceNet Getting Results Manual*	9399-DNETGR

Data Type Definitions

The following mnemonics define the Ultra3000 with DeviceNet data types.

Mnemonic	Description
ARRAY	Sequence of Data
BOOL	Boolean (1 byte)
BYTE	Bit String, (1 byte)
DINT	Signed Double Integer (4 bytes)
DWORD	Bit String, (4 bytes)
EPATH	DeviceNet Path Segments
INT	Signed Integer (2 bytes)
SHORT_STRING	Character String (1 byte length indicator, 1 byte per character)
SINT	Signed Short Integer (1 byte)
UDINT	Unsigned Double Integer (4 bytes)
UINT	Unsigned Integer (2 bytes)
USINT	Unsigned Short Integer (1 byte)
WORD	16-bit Word, (2 bytes)

Identity Object (Class ID 01_H)

This object provides identification and general information about the device.

Identity Object,
Attribute for Instance ID = 0 (Class Attributes)

Attr ID	Access Rule	Attribute Name	Type	Description	Semantics of Values
2	Get	Max Instance	UINT	Maximum instance number of an object currently created in this class level of the device.	The largest instance number of a created object at this class hierarchy level.

Identity Object,
Instance ID = 1 - 2

Instance ID	Description
1	Ultra3000
2	Ultra3000 Main Firmware

Identity Object,
Attributes of Instance ID = 1 - 2

Attr. ID	Access Rule	Attribute Name	Data Type	Description	Semantics of Values
1	Get	Vendor ID	UINT	Identification of each vendor by number	01 = Rockwell Automation/ Allen-Bradley
2		Device Type		Indication of general type of product.	Instance 1: 115 = Rockwell Automation Miscellaneous Instance 2: 105 = Subcomponent
3		Product Code		Identification of a particular product of an individual vendor	Instance 1: 12 = 2098-DSD-005-DN 13 = 2098-DSD-010-DN 14 = 2098-DSD-020-DN 15 = 2098-DSD-030-DN 16 = 2098-DSD-075-DN 17 = 2098-DSD-150-DN 18 = 2098-DSD-005X-DN 19 = 2098-DSD-010X-DN 20 = 2098-DSD-020X-DN 21 = 2098-DSD-030X-DN 62 = 2098-DSD-075X-DN 63 = 2098-DSD-150X-DN 81 = 2098-DSD-HV030-DN 82 = 2098-DSD-HV050-DN 83 = 2098-DSD-HV100-DN 84 = 2098-DSD-HV150-DN 85 = 2098-DSD-HV220-DN 86 = 2098-DSD-HV030X-DN 87 = 2098-DSD-HV050X-DN 88 = 2098-DSD-HV100X-DN 89 = 2098-DSD-HV150X-DN 90 = 2098-DSD-HV220X-DN Instance 2: 01 = Firmware
4		Revision Major Minor	STRUCT of: USINT USINT	Revision of the item the Identity Object represents.	 Major Revision Minor Revision
5		Status	WORD	This attribute represents the current status of the entire device. Its value changes as the state of the device changes.	See table: Identity Object, Status Description of Attribute ID = 5
6		Serial Number	UDINT	Serial number of device	Unique identifier for each device.
7		Product Name	SHORT_ STRING	Readable identification	Unique identifier for each product.

Identity Object,
Status Description of Attribute ID = 5

Bit (s)	Description	Semantics of Values
0	Owned	TRUE = device has an owner
1		Reserved, set to 0
2	Configured	Always = 0
3		Reserved, set to 0
4, 5, 6, 7		Vendor specific
8	Minor recoverable fault	Always = 0
9	Minor unrecoverable fault	Always = 0
10	Major recoverable fault	TRUE if self diagnosis detects a major fault
11	Major unrecoverable fault	Always = 0
12, 13		Reserved, set to 0
14, 15		

Identity Object,
Common Services

Service Code	Implemented for		Service Name	Service Description
	Class	Instance		
$0E_H$	Yes	Yes	Get_Attribute_Single	Returns the contents of the specified attribute.
05_H	No		Reset	Invokes the Reset service for the device.
11_H	Yes	n/a	Find_Next_Object_ Instance	Causes the specified class to search and return a list of instance IDs of existing instances of the Identity Object.

Reset Service

When the Identity Object receives a Reset request, it:

- determines if it can provide the type of reset requested
- responds to the request
- attempts to perform the type of reset requested