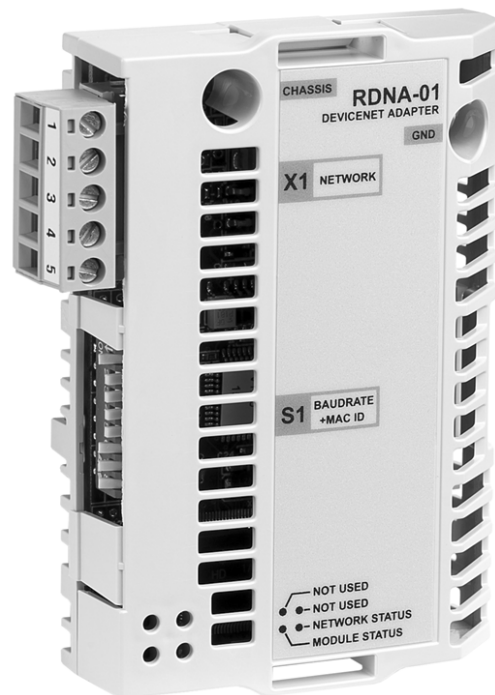


ABB Drives

User's Manual DeviceNet Adapter Module RDNA-01



Introduction

Intended audience

The manual is intended for people responsible for installing, commissioning and using an RDNA-01 DeviceNet Adapter module. The reader is expected to have a basic knowledge of electrical fundamentals, electrical wiring practices and how to operate the drive and the DeviceNet protocol.

Before you start

It is assumed that the drive is installed and ready to operate before starting the installation of the extension module.

In addition to conventional installation tools, have the drive manuals available during the installation as they contain important information not included in this manual. The drive manuals are referred to at various points of this document.

What this manual contains

This manual contains information on the wiring, configuration and use of the RDNA-01 DeviceNet Adapter module.

Safety instructions are featured in the first few pages of this manual.

Overview contains short descriptions of the DeviceNet protocol and the RDNA-01 DeviceNet Adapter module, a delivery checklist and information on the manufacturer's warranty.

Quick start-up guide contains a short description of how to set up the RDNA-01 DeviceNet Adapter module using the ACS800 drive as an example.

Mechanical installation contains placing and mounting instructions for the module.

Electrical installation contains wiring, bus termination and earthing instructions.

Drive configuration explains how to program the drive before the communication through the adapter module can be started.

Master configuration explains how to program the DeviceNet master before communication through the adapter module can be started.

Communication profiles describes the communication profiles used in the communication between the DeviceNet network, the RDNA-01 module and the drive.

Communication contains a description of the DeviceNet functionality supported by the RDNA-01.

Diagnostics explains how to trace faults with the status LEDs on the RDNA-01 module.

Definitions and abbreviations explains definitions and abbreviations concerning the DeviceNet protocol family.

Technical data contains information on physical dimensions, configurable settings and connectors of the module and a specification of the DeviceNet link.

Further Information

Further information on the DeviceNet protocol is available on the world wide web from www.odva.org.

Product and service inquiries

Address any inquiries about the product to your local ABB representative, quoting the type code and serial number of the unit in question. A listing of ABB sales, support and service contacts can be found by navigating to www.abb.com/drives and selecting *Drives – Sales, Support and Service network*.

Product training

For information on ABB product training, navigate to www.abb.com/drives and select *Drives – Training courses*.

Providing feedback on ABB Drives manuals

Your comments on our manuals are welcome. Go to www.abb.com/drives, then select successively *Drives – Document Library – Manuals feedback form*.

Overview

Overview

This chapter contains a short description of DeviceNet bus topology, the RDNA-01 Adapter module, a delivery checklist, and warranty information.

Further information can be obtained from www.odva.org.

DeviceNet Bus topology

The DeviceNet network has a linear bus topology. Terminating resistors are required on each end of the trunk line. Drop lines as long as 6 metres (20 feet) each are permitted, allowing one or more nodes to be attached. DeviceNet allows branching structures only on drop lines. An example of an allowable topology is shown in [Figure 1](#).

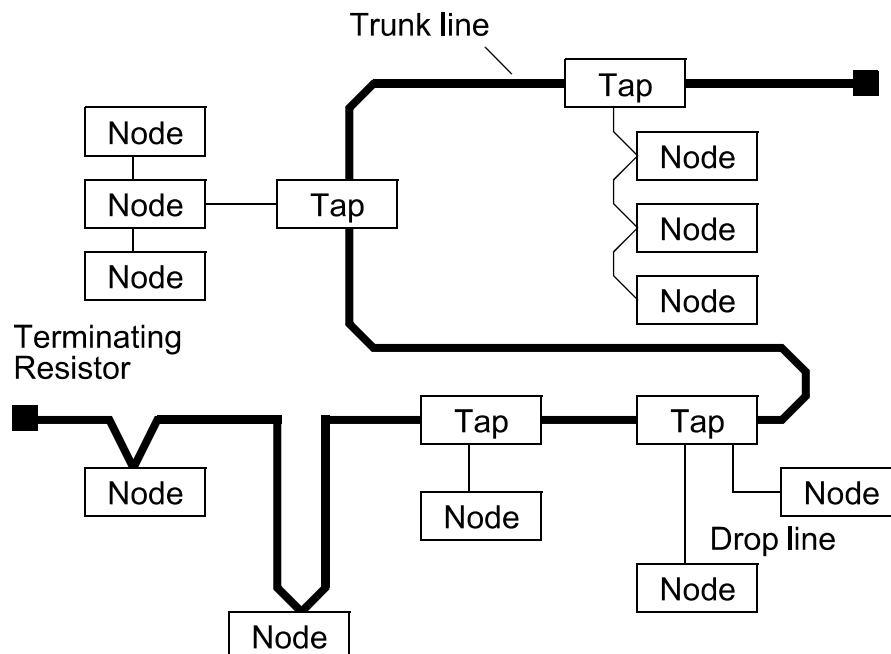


Figure 1. DeviceNet bus topology

The maximum length of trunk cable depends on the data rate and on the type of the cable used (see chapter [Technical data](#)).

Terminating resistor

The DeviceNet network should be terminated at both ends of the trunk cable with a 121 ohm, ¼ W, 1% Metal Film resistor. Connect this resistor between the two signal wires (CAN_H, CAN_L) on the DeviceNet cable.

The RDNA-01 DeviceNet Adapter module

The RDNA-01 DeviceNet Adapter module is an optional device for ABB drives which enables the connection of the drive to a DeviceNet system. The drive is considered as a slave in the DeviceNet network. Through the RDNA-01 DeviceNet Adapter module it is possible to:

- give control commands to the drive (Start, Stop, Run enable, etc.)
- feed a motor speed or torque reference to the drive
- give a process actual value or a process reference to the PID controller of the drive
- read status information and actual values from the drive
- read and write drive parameter values
- reset a drive fault.

The RDNA-01 acts as a Class 2 slave only with predefined master-slave connection set services. These include the Explicit Messaging, the Poll-Response service and the Change of State/ Cyclic service. The DeviceNet commands and services supported by the RDNA-01 DeviceNet Adapter module are discussed in chapter [Communication](#). Please refer to the user documentation of the drive as to which commands are supported by the drive.

The adapter module is mounted into its option slot inside the drive. See the *Hardware Manual* of the drive.

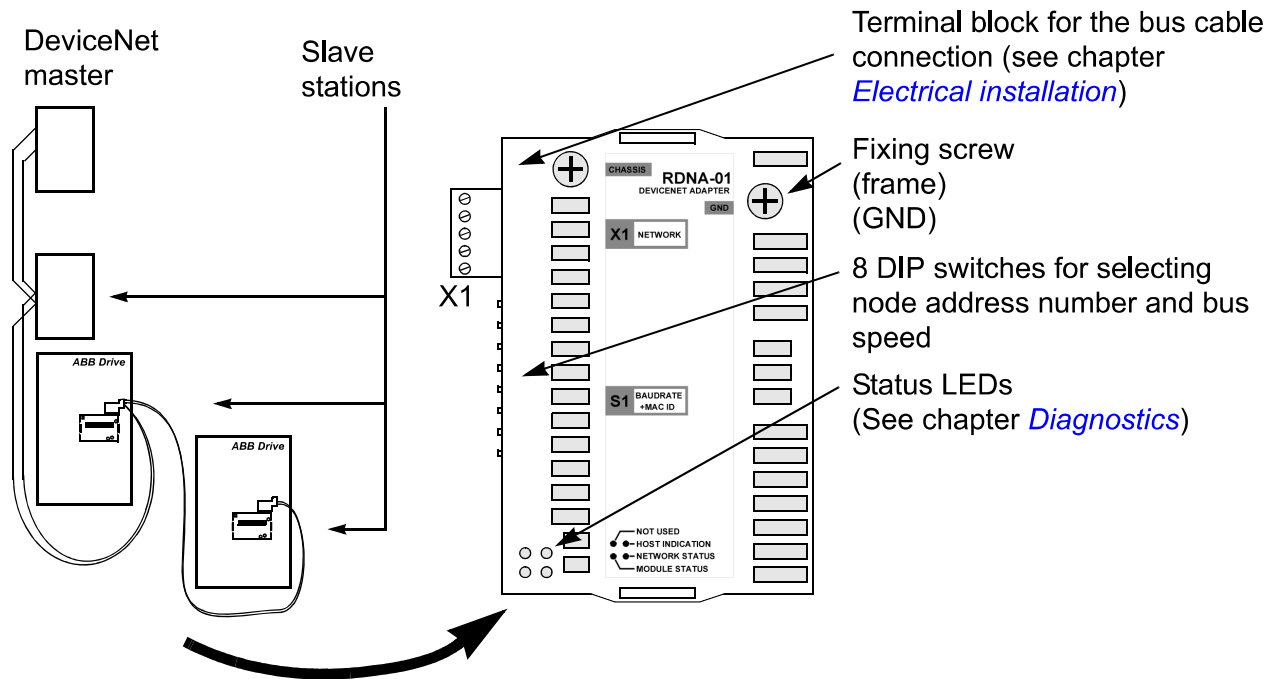


Figure 2. The construction of the DeviceNet link and the module layout of the RDNA-01

Compatibility

The RDNA-01 is compatible with all scanners working according to ODVA DeviceNet specifications.

Delivery check

The option package for the RDNA-01 DeviceNet Adapter module contains:

- RDNA-01 module
- two screws (M3×10)
- this manual.

Warranty and liability information

The manufacturer warrants the equipment supplied against defects in design, materials and workmanship for a period of twelve (12) months after installation or twenty-four (24) months from date of manufacturing, whichever first occurs. The local ABB office or distributor may grant a warranty period different to the above and refer to local terms of liability as defined in the supply contract.

The manufacturer is not responsible for

- any costs resulting from a failure if the installation, commissioning, repair, alternation, or ambient conditions of the drive do not fulfil the requirements specified in the documentation delivered with the unit and other relevant documentation
- units subjected to misuse, negligence or accident
- units comprised of materials provided or designs stipulated by the purchaser.

In no event shall the manufacturer, its suppliers or subcontractors be liable for special, indirect, incidental or consequential damages, losses or penalties.

If you have any questions concerning your ABB drive, please contact the local distributor or ABB office. The technical data, information and specifications are valid at the time of printing. The manufacturer reserves the right to modifications without prior notice.

Quick start-up guide

Overview

This chapter presents the steps to take during the start-up of the RDNA-01 DeviceNet Adapter Module. For more detailed information, see the chapters [Mechanical installation](#), [Electrical installation](#), and [Drive configuration](#) elsewhere in this manual.



WARNING! Follow the safety instructions given in this manual and the *Hardware Manual* of the drive.

PLC Configuration

This is an example on how to configure an Allen-Bradley ControlLogix 5555 PLC with a 1756-DNB 1756 DeviceNet Scanner to use an ACS800 equipped with an RDNA-01 fieldbus adapter.

- Select and import the EDS file for drive, for example ACS800_Standard_RDNA01_app11.36_Typical_filerev3.2.EDS. For more help on choosing the correct file, refer to ABB EDS Selection Guide document delivered with the EDS files.

Note: Only one EDS file with the same Product ID and Vendor code can be installed in the PLC at a time.
