DELTA
AUTOMATION, INC

Automation Service News

The Newsletter of Delta Automation Inc.

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Delta's Newest
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Tech Tip!

Understanding A/B DeviceNet Networks

DeviceNet is an open standard industrial network managed by the Open DeviceNet Vendors Association (ODVA). DeviceNet uses CAN (Controller Area Network) for its data link layer, and CIP (Common Industrial Protocol) for the upper layers of the network. DeviceNet is a cost effective solution to connect low-level industrial devices (sensors, drives, discrete I/O, etc.) to Programmable Logic Controllers (PLC's) from a large number of manufacturers. Each DeviceNet network supports up to 64 nodes (with one node dedicated to the DeviceNet scanner and one node reserved for new, unaddressed devices). DeviceNet uses a trunk/drop line topology with a maximum trunk length of 1,640 feet and a maximum baud rate of 500K bit/sec. Maximum baud rate is trunk length and cumulative drop length dependent. DeviceNet utilizes three styles of cable (Thick, Thin, and Flat) all of which include two lines for signal and two lines for device power. Both the thick and thin cable are shielded cable with a drain wire, the flat cable is not shielded and has no drain wire. The maximum length for flat cable is 1378 feet. The maximum length for thin cable is 328 feet. As cable length increases, the allowable baud rate decreases. The network is terminated at each end with a 121 ohm 1% ¼ watt resistor. The network is grounded at one location, preferably in the center of the network.

The DeviceNet network consists of trunk lines, drop lines, taps, open and sealed style connectors, trunk termination resistors, one or more cable power supplies, and addressable device nodes. Power supplies for communications are connected to the trunk using a power tap and drop line not to exceed 10 feet.

Devices (nodes) on the DeviceNet network are connected directly using a T-port or via drop lines off the trunk line. Connection of the nodes on any given drop line may be in either a daisy-chain or star configuration. However, no one drop line may exceed a length of 20 feet (including all drop line segments connecting individual nodes to the trunk line). If the tap closest to the terminator has a cumulative drop line length greater than the length between the tap and terminator, then the drop line length is counted when determining the trunk line total length. Additionally, the cumulative length of all drop lines in any given DeviceNet network may not exceed 512 feet. The cumulative length of all drop lines in a given DeviceNet network will limit the maximum baud rate.

DeviceNet utilizes a trunk line/drop line topology as illustrated in the figure below.

trunk line
drop line
☐ device or node
TR = terminating resistor
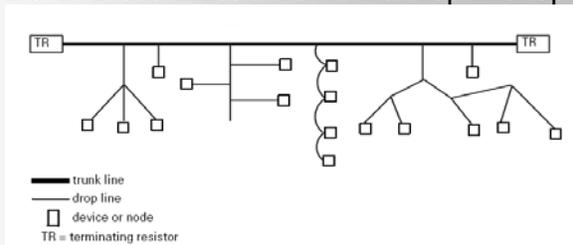
Delta Automation, Inc. can certify these networks for you and your customers.
Call 1-888-723-3582.
Article referenced from Publication DNET-UN072C-EN-P – July 2004

Modbus Plus Tester

Introducing:

Delta Automation Inc.'s, DA-MBP-100, Modbus Plus® network tester.

The DA-MBP-100 is designed to give the users of Modbus Plus® networks, a low cost solution and the ability to determine the functionality of a given segment$_1$ utilizing metallic cable, in a basic GO, NO-GO fashion.

The most important aspect of the DA-MBP-100 is to quickly determine if a problem is, or is not, *network* related , to reduce or eliminate needless time troubleshooting a non-existent network problem.

This low cost, small, hand held, unit is invaluable to all that must maintain a Modbus Plus® network. It may be moved from segment$_1$ to segment$_1$, network to network as required or be permanently located on one system for continuous monitoring of that segment$_1$.

The unit also comes with a valuable troubleshooting guide to aid in the identification, location, and repair of a Modbus Plus® network.

Call Delta today to get more information or pricing and availability!

® Modbus Plus is a registered trademark of Schneider Automation
1 A segment is defined as the section of metallic cable between terminators.

Delta's Newest Field Service Engineer

Ed McClure brings Extensive Allen Bradley Experience to Delta Automation. Edward "Ed" McClure has joined Delta Automation's team of field engineers. He comes to Delta Automation with an extensive background in electronics, industrial automation, and 15 years in the design, fabrication, programming, and commissioning of complex Allen Bradley based PLC/HMI control systems spanning a number of industries. His most recent position prior to joining Delta Automation was as a senior electrical controls engineer with a major manufacturer of post-press newspaper automation equipment. Prior to that he spent 10 years as a systems integrator for Allen Bradley based controls and 5 years in the design and manufacturing of brushless DC motor controls. Both a strong advocate of structured programming practices and an excellent communicator, Ed also developed and taught an intensive 10 week Allen Bradley PLC programming course for a major Virginia automotive manufacturer. He will be responsible network certifications on the AB networks as well as AB projects and service calls.

Why not call Ed today, 1-888-723-3582, and see how your Allen Bradley based plant can reduce maintenance costs and downtime.

In Memory

ASTRO
1993-2005

We are sad to announce that our much beloved mascot and loyal friend, Astro, passed away in October after a short illness.
You may remember him from our calendars in past years, he has portrayed several roles, delivery driver, security officer, and bench technician.
He will be sorely missed here at Delta Automation, Inc.

Important Info

Delta Automation, Inc. Holiday Response

A major customer in Ohio, began experiencing network errors on his Modbus Plus system on the day before Christmas Eve. The customer had exhausted all of the companies resources and a call for help was routed to Delta Automation, Inc. Initially he requested telephone support. Engineers from Delta spoke with him and suggested several options in troubleshooting. Later, still experiencing frustration, he then requested on-site service. At 3:00 Delta's Field Service Engineers left Richmond, arriving at the customers location at 10:00 P.M. Working through the night, the problem was found and resolved. At around midnight, the plant was back in production and the Delta Engineers were requested to stay a while to ensure the system was solid. At 3:00 A.M. the plant personnel were convinced that the system was functioning normally and released the Delta Engineers. They began their trek back to Richmond on Christmas Eve arriving in time for the company Christmas party. This is just one example of how Delta Automation, Inc. goes the extra distance to achieve full customer satisfaction.

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For after hours
Emergency Service or Parts
Call our main number 888-723-3582 or digital pager 1-888-969-1308

Extension 55

Leave a message and someone will respond within fifteen minutes to answer your call.
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