

# Automation Service News

The Newsletter of Delta Automation Inc.

**Tech Tip!**

Useful Technical Information  
About Modbus Plus

**Modbus Plus  
Nightmare Resolved  
on Death Row**

**On-Site Service Call  
Ends Nightmare with an  
Intermittent Network on  
Death Row**

**Service Kits Back in Stock!**

Remote I/O Service Kit Part  
Numbers and Pricing

**Important Info!**

Delta Automation Inc. authorized by Square D  
for Automation Products Service

**Delta Automation Contact Info**

Contact names, numbers and e-mail  
addresses

**Tech Tip!**

## Utilization of Momentum "Cluster Connectors" with ModBus Plus



The Momentum product is a wonderful product for low cost, easy to install remote located "drops". This product can be utilized as a stand alone device or within a network of many units. A common installation practice is to install several of the units "clustered" together to achieve the proper I/O count. Typically, the units are placed within one enclosure and are coupled together utilizing the Modbus Plus networking scheme. This technique makes use of the 170XTS02000 adaptor/connector and the 170MCI02010 cable with the RJ-45 type connectors mounted upon them.

These produce a compact and tidy package which functions well within the confines of that enclosure. Problems can occur, however, when several of these "cluster" arrangements are to be networked together, or within a larger network<sup>1</sup>. These problems are usually manifested as communication errors being reported as unable to communicate to a particular node or nodes. This is caused by a large impedance "bump" on the larger network when the "cluster" is installed upon it. The impedance mismatch is created by the nodes being connected too close to one another<sup>2</sup>. Each node always causes a certain amount of impedance "bump", however when several of these are "clustered" the impedance "bump" becomes additive and creates a much larger impedance mismatch on the network creating waveform degradation that leads to communication problems. The solution is to install the Tee type connectors (part # 990NAD23000) and drop cables on the clustered units when adding or connecting them to a larger network.



**"Cluster"**



**"Tee Type"**

These are the types of issues and problems that can be avoided by utilizing the network services of Delta Automation Inc. for all of your network design and support needs. Delta Automation Inc. certifies Modbus Plus, Modbus II and Remote I/O networks in metallic and fiber optics.

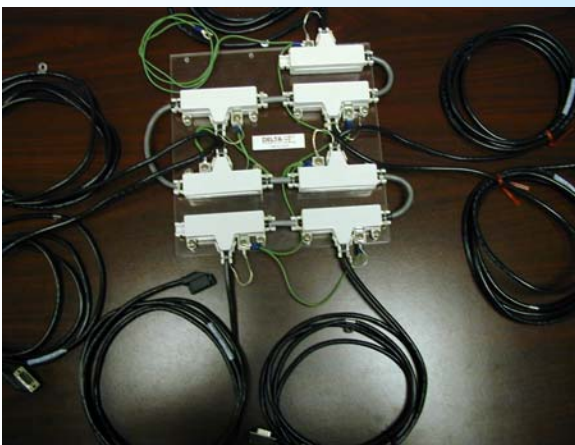
<sup>1</sup> A larger network is one with a high node count and/or an extended distance in feet.

<sup>2</sup> The minimum recommended distance is approximately 10 feet.

Delta Automation Inc.  
Service Related Success

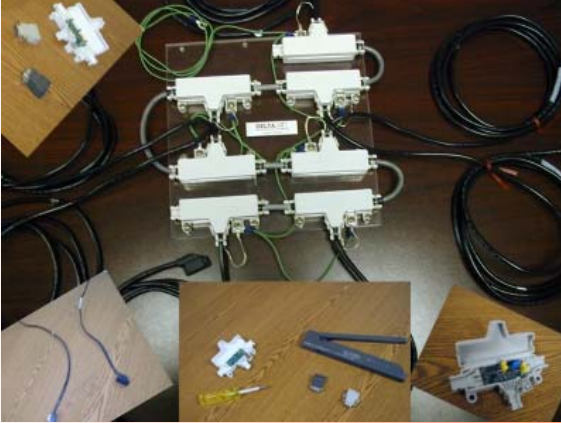
## Modbus Plus Nightmare Resolved on Death Row

A maximum security prison facility had recently increased the size of its Death row section and installed a new Momentum based door locking system. The contract was given to a system integrator familiar with the operation of prison systems, but not so familiar with the Modbus Plus networks. This resulted in a system that was plagued with intermittent communication problems. This delayed the movement of inmates to the new facility for several months. For reasons unknown to Delta Automation, the contractor was no longer in the project. The states' central engineering group was tasked with getting the system up and running. A call to the Square D field service organization resulted in a dispatch of Delta Automation Inc. to the site. This is a direct result of Delta Automation Inc. being authorized as an automation service center. Once on-site, at the Death row section of this facility, the system was examined and found to have many flaws. In fact, the system could only be "patched" at that time due to the number and severity of problems. A quote was given to the central engineering group to completely re-install all of the correct cabling and parts to insure that the system was brought up to the proper specifications. Additionally, Delta Automation Inc. suggested a system of pre-fabricated sub-panels to allow the on-site installation time to be kept at a minimum. The quote was accepted and within several days the



parts were procured and pre-assembled at Deltas' shop. The arrangements were made at the prison and the installation and certification was completed in one day. The central engineering group seeing the advantage and success of this type of service and installation, contracted Delta Automation Inc. to perform this service on it's other three systems. All of the systems are running error free, and as an added benefit to the personnel that must service these systems, on-site maintenance and trouble shooting classes are being scheduled.

## *Coming Soon! A ModBus Plus Installation Kit!*



Delta Automation Inc. is currently in production of a complete installation kit for ModBus Plus. This kit will include: cable cutters, a stripping tool, a compression tool, a punch-down tool, screwdriver and carrying case. This kit will also include several of the different types of connectors currently in use (the MBKT type and the Tee type).

Please check with Bernie or Dave for availability.

## **Remote I/O Service Kits**

In our last newsletter, Delta Automation Inc. announced production of a special kit containing all of the necessary tools and parts for installation of the new style remote I/O connectors. The kits were sold out immediately! We are happy to announce that they are back in stock. There are three kits from which to choose. The most useful and economical, is the combination kit, **DA-RIOC-KIT**.

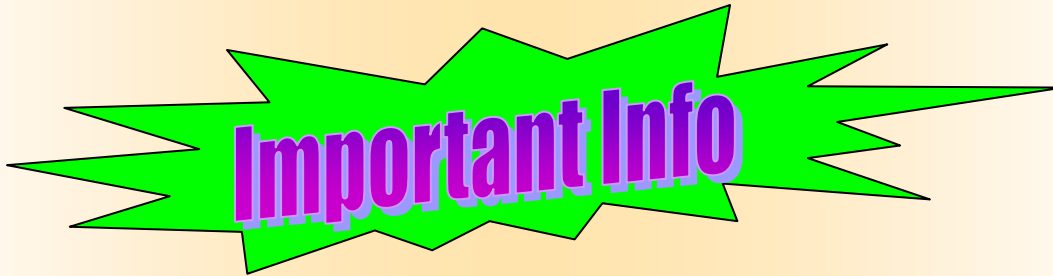
The RG-6 Kit, Part number **DA-RIO6-KIT**, priced at \$ 275.00 each.

The RG-11 Kit, part number, **DA-RIO1-KIT**, priced at \$ 361.00 each.

The combination RG-6/RG-11 Kit, Part number, **DA-RIOC-KIT**, priced at \$ 518.00 each.



These kits have proven to be invaluable to anyone that must service and maintain remote I/O systems.



The **Square D Company** has Authorized Delta Automation Inc. as its **first ever**

## **Authorized Service Center for Automation Products.**

This authorization will enable faster response times to customers and distributors and brings the tribal knowledge of the older products back into the service arena. This knowledge of the legacy products provides the ground-work for system upgrades and PIP's. Delta Automation Inc. has a working lab of these legacy systems to fully understand and properly integrate the customers existing programs from those platforms to the newer systems.

The engineers at Delta Automation Inc. have the expertise to make sure that system conversions and their respective start-ups occur smoothly and at a reasonable cost in product and services and most importantly in minimal required downtime, that the customer can justify.



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### **For after hours**

### **Emergency Service or Parts**

Call our main number 888-723-3582

**Extension 55**

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

[www.deltaautomation.com](http://www.deltaautomation.com)

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