

# TecNote 1009 - Converting a Naztec 980 Serial Controller to an Ethernet Controller

Naztec, Inc would like to thank the staff of Seminole County, FL for creating the following Technote which gives users a step by step procedure for converting a Naztec 980 Serial Controller to an Ethernet Controller.

## Materials and tools for conversion

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In order to have full network capabilities on a Naztec 980 controller, the controller CPU (face-plate) needs to be replaced and a network card needs to be added to the controller. This process is called Serial to Ethernet Controller Conversion. Since this process includes working with circuits, it is mandatory to work in a static-free environment. A special area in the shop should be designed for that purpose with anti-static mats, grounded and isolated work bench, and anti-static wristband. The use of an anti-static wristband is required at all times when working with the controller conversion.

For this conversion you will need the following materials:

- A Naztec 980 Ethernet controller face plate
- A Naztec 980 Ethernet 100 Mbps network board.
- A network board locking bay.
- A communications ribbon strap.
- Hardware included in conversion package.



**Face Plate Conversion Materials**

For this process you will need the following tools:

- A small flat head screwdriver.
- A small Phillips screwdriver.
- A flush cutter.



**Face Plate Conversion tools.**

The CPU (face plate) upgrade is for both the TS 2- Type 1 controller and the TS 2-Type 2 controller. The TS 2-Type 1 only has the one (1) connector on the front side of the controller, whereas the TS 2-Type 2 has four (4) connectors for TS-1 cabinet applications. For each controller there are some specific procedures that are going to be specified thru the conversion process explanation.

## Conversion Procedure

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The conversion procedure is as follows:

- 1) Strap yourself with anti-static wristband. See figure 1a.
- 2) Remove the screws from both sides of the controller cover. See figure 2a.



**Figure 2a**



**Figure 1a**

- 3) Remove the screws from the front of controller face plate and remove power ribbon. See figure 3a and 3b.



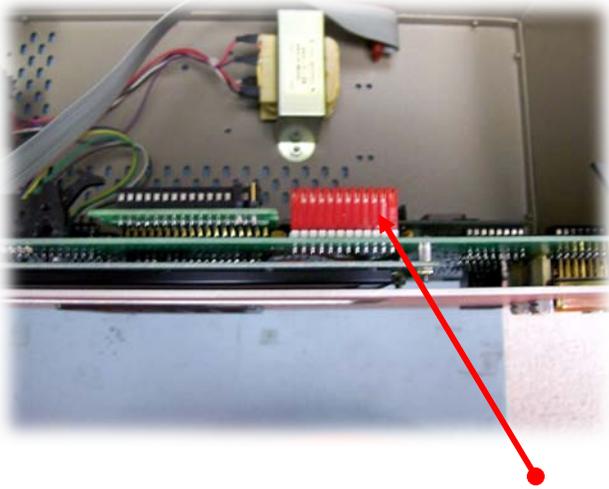
**Figure 3a**



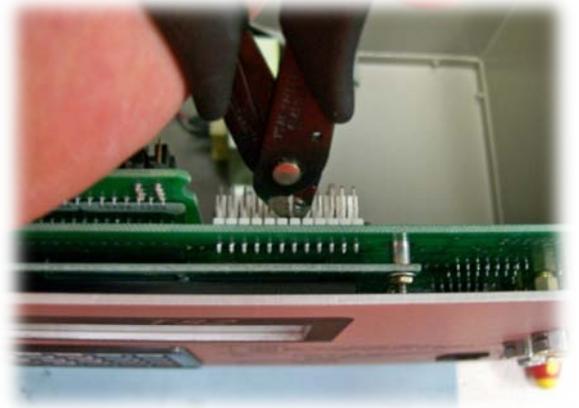
**Figure 3b**

4) Install the new Ethernet CPU (face plate).

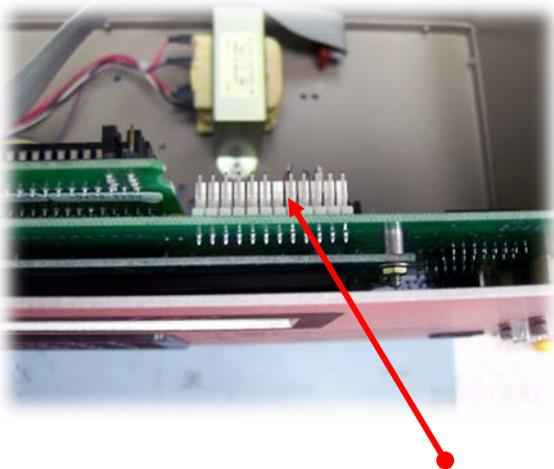
5) If the CPU (face plate) is installed on a TS 2-Type 1 controller, follow figure 5a, 5b, and 5c by removing the red cover (see figure 5a) from the power connector and cut the 7th pin from left to right (see figure 5b) and plug in the power ribbon cable. If the CPU (face plate) is installed on a TS 2-Type 2 controller go to figure 5d and reconnect the main ribbon cable.



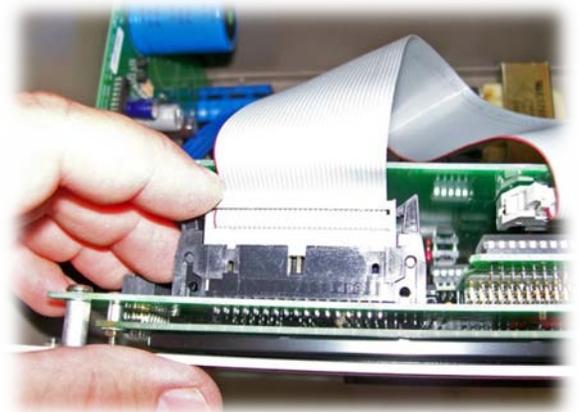
**Figure 5a: Red power connector**



**Figure 5b: Cutting 7<sup>th</sup> pin on new face plate for TS 2-1 Type controller installation.**

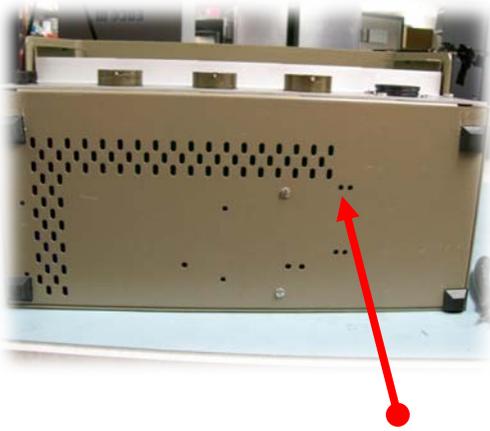


**Figure 5c: Power connector with pin**



**Figure 5d: Main board ribbon connected on new face plate for TS 2-2 Type Controller.**

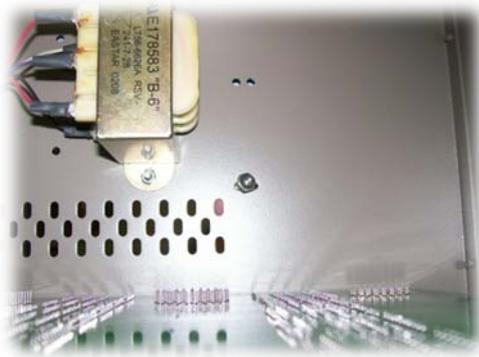
6) Install the network card locking bay. Start by inserting a screw from the bottom of the controller on the left hole (see figures 6a and 6b) and start the nut on the inside before installing the locking bay (see figure 6c). Be sure to install it so that the thin guide bay faces the controller's right side wall and the lock pin under locking bay is on the right hole. See figure 6d.



**Figure 6a: Left hole.**



**Figure 6b**

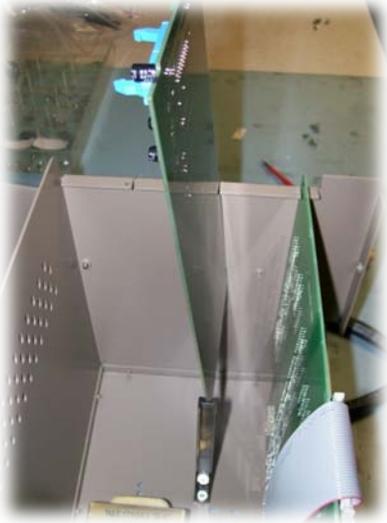


**Figure 6c**



**Figure 6d**

7) Insert the network card and screw it to the controller sidewall.



**Figure 7a**



**Figure 7b**

8) Install the Naztec supplied ribbon cable between the CPU (face plate) communication port and the network card communication port. Once the ribbon cable is connected, make sure that the red line for power falls on the right side. See figures 8a and 8b.



**Figure 8a**



**Figure 8b**

9) Close the controller cover. Screw in side screws. See figure 9a.



**Figure 9a**

10) Plug a power cord to the controller to verify proper controller operation. See figure 10a.



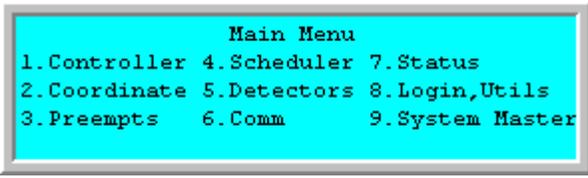
**Figure 10a**

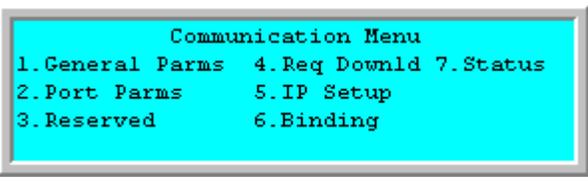
## Setting up IP Addressing on the 980 controller

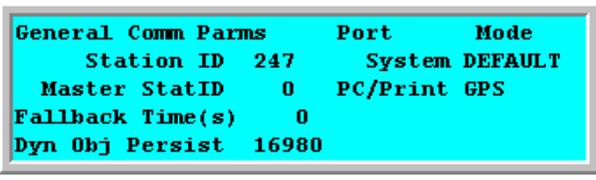
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To communicate with a local controller or master via Ethernet the user must set up (program) the IP address via the front panel of the controller. The following screen shots will assist you:

TYPE	SCREEN	DESCRIPTION
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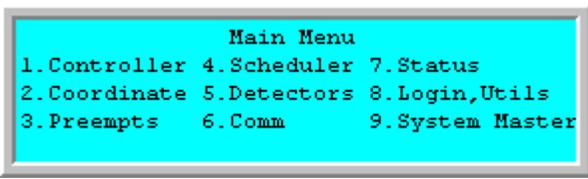
MM		Main Menu
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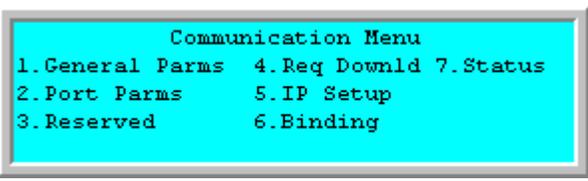
6		Communications Menu
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1		Set up Station ID to Match Streetwise ID
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In the above example the Streetwise ID is 247 and it must match the entry at MM->6->1. Now you have to set up the IP address to match the controller definition's IP address in StreetWise. as shown below

TYPE	SCREEN	DESCRIPTION
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MM		Main Menu
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6		Communications Menu
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IP	Device	Host
Addr	192.168.100.247	1-192.168.100.248
Mask	255.255.255. 0	2- 0. 0. 0. 0
		Port #: 0
GtWay	0. 0. 0. 0	IP Enable: ON
Reset Time:	5	Status: OK

5

IP Address

When programming the IP Setup screen at MM->6->5 the user must program the IP Addr field to match the IP ADDR field as defined on the StreetWise controller Definition Screen. In addition, the should program MASK field . The HOST field may be programmed as well as the GTWAY field depending on the network and hardware device setup (Such as routers, switches, etc.) that have been installed in the field.

To establish the IP communications one should toggle IP ENABLE to ON.

## Summary

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By following this standard operational procedure users have a step by step procedure for converting a Naztec 980 Serial Controller to an Ethernet Controller.

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