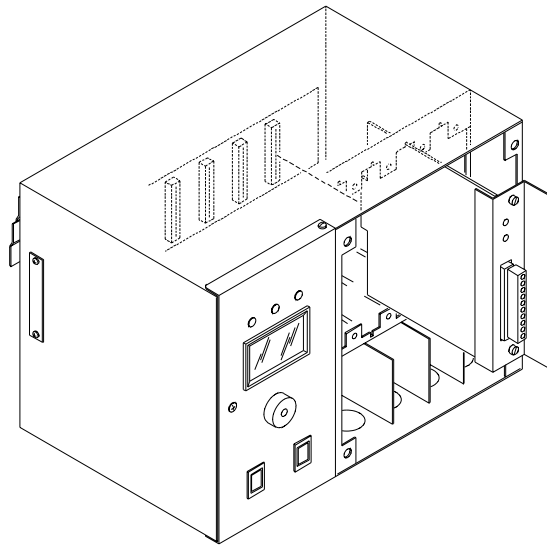


# Pro *link*

## Pump Control Network Card Installation Manual



**Pro *link* Fuel Management System**

RE260-268  
Rev C  
July '00

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## **Pump Control Network Card Installation Manual**

*RE260-268 • Rev C • July '00*

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Marley Pump Company is ISO 9001 certified.

Red Jacket's Prolink has been approved by Underwriters Laboratories to carry the UL Listing Mark.

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# About This Manual

This preface describes the organization of this manual, explains symbols, typographical conventions used, and defines vital terminology.

## ***Organization***

This manual is organized into three chapters and an index:

- Chapter 1:** Before You Start
- Chapter 2:** Overview and Installation
- Chapter 3:** Pathway Plus Setup
- Index:**

## ***Typographical Conventions***

<b>Numeric Formats:</b>	A numeric zero looks like 0 in this document. An uppercase letter “oh” is rendered as O. A numeric one looks like 1 in this document. A lowercase letter “ell” is rendered as l. However, to prevent confusion, the abbreviation for milliliter includes a capital letter (mL).
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## Terminology

The following terms are used throughout this manual to bring attention to the presence of hazards of various risk levels, or to important information concerning use of the product.

### **DANGER!!**

Indicates the presence of a hazard that **will** cause **severe** personal injury, death, or substantial property damage **if ignored**.

### **WARNING!**

Indicates the presence of a hazard that **can** cause **severe** personal injury, death, or substantial property damage **if ignored**.

### **Caution**

Indicates the presence of a hazard that **will** or **can** cause **minor** personal injury or property damage **if ignored**.

### **Notice**

Indicates special instructions on installation, operation, or maintenance that are important but not related to personal injury hazards

# Chapter 1: Before You Start

## *This Chapter Explains:*

- Intrinsic Safety
- Installation DOs and DON'Ts

---

## Intrinsic Safety Information

### ATTENTION INSTALLER

#### READ THIS IMPORTANT SAFETY INFORMATION BEFORE BEGINNING WORK

*Portions of this product will be installed and operated in the highly combustible environment of a petroleum product storage tank. It is essential that you carefully read and follow the warnings and instructions in this manual to protect yourself and others from serious injury, explosion, electrical shock, or death.*

<b>WARNING!</b>	<p>All installation and programming of Red Jacket Prolink enclosures should be performed by factory trained personnel only. Before beginning any installation procedure, carefully read and understand all instructions.</p> <p>Failure to follow these guidelines can result in severe personal injury, death, or substantial property damage. Retain a copy of this manual on site with the Prolink enclosure system as required by EPA regulations in paragraph 40CFR 280.45. Installations must comply with section 504, article 300 of the N.E.C. which defines intrinsic safety.</p>
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*Precautions must be taken in the installation of this product to limit power in the wiring to the fuel tanks and to keep that wiring physically separated from any other wiring (intrinsically safe).*

**Notice**

It is your responsibility to maintain the effectiveness of the safety features by installing this product in accordance with the instructions and warnings that follow. Failure to do so could create danger to life and property and will result in voiding all warranties connected with this product.

---

## Installation DOs and DON'Ts

**WARNING!**

Failure to follow these guidelines could result in severe personal injury, death, or substantial property damage.

### DOs

The following list represents the **DOs** for installing the Pump Control network card. Please read through this list before beginning the installation.

- DO plan all conduit or direct-bury runs and contractor's box installations before mounting the ProLink main data chassis.
- DO install the system to meet the National Electric Code(section 504, article 300); federal, State, and local codes; and any applicable safety regulations.
- DO disconnect all power before making final connections.
- DO maintain intrinsic safety. Sensor wires must be separated from all other non-intrinsically safe wiring. Install the safety tag on all intrinsically safe contractor's boxes.
- DO use Red Jacket recommended interconnect cable for conduit or direct bury applications. See table in Appendix A: Parts List.
- DO observe proper conduit access into the ProLink enclosure.
- DO mount the ProLink main data chassis in a dry, climate controlled environment.
- DO hardwire ProLink to a dedicated, isolated, circuit breaker.
- DO print all setup reports and store them on-site (after final programming is complete).
- DO install a station ground rod (if one is not present) and verify that it is connected to the ProLink main data chassis.

**WARNING!**

Failure to verify this ground connection **CAN** cause **SEVERE** personal injury, death, or substantial property damage.



<b>WARNING!</b>	<b>Failure to comply with these installation requirements will void product warranty.</b>
-----------------	---

## **DON'Ts**

The following list represents the **DON'Ts** for installing the Pump Control network card. Please read through this list before beginning the installation.

- *DON'T* short circuit the power supply.
- *DON'T* handle the Pump Control network card or other circuit boards without proper grounding straps.
- *DON'T* allow unauthorized field service personnel to work on the internal circuits of ProLink or the Pump Control network card. Unauthorized work will adversely affect the intrinsic safety of the system and void product warranty.
- *DON'T* run any other lines or power devices through the ProLink enclosure. The ProLink main data chassis is a low-voltage device.
- *DON'T* hammer the cable into the sawcut.
- *DON'T* drill any holes in the ProLink enclosure.
- *DON'T* pull inventory sensor wires more than 1,000 feet maximum from ProLink .
- *DON'T* use cold water pipe as earth ground.
- *DON'T* cross barriers of low voltage with high voltage wire.
- *DON'T* cross phase controller with product relays.

# Chapter 2: Overview and Installation

## *This Chapter Explains:*

- **Pump Control Network Card Overview**
  - Installation Requirements
- **Installation Procedures**
  - Pump Control network card configuration worksheet information
  - Prolink installation and configuration worksheet sample
  - Installation information and notes

---

## Pump Control Network Card Overview

The Pump Control network card functions as the interface between the Prolink network, the dispensers, and pumps. It has the eight dispenser input terminals and eight pump outlet terminals. This card can detect signals from the dispensers and send a signal to activate a relay to start a pump. This network card can signal the pump(s) to turn on when conducting line leak tests.

Connections for the dispenser signal and the pump output signal are made on the front faceplate of the Pump Control card. The top set of connectors are for dispenser input signals and are numbered consecutively from the top(1-8). (Refer to *figure 1.3*) The lower set of connectors are for the pump relay output signals and are also numbered from top to bottom(1-8). The service pin and LED are located at the top of the card faceplate. (Refer to *figure 1.2*)

Each output terminal is fused with a 1A fuse. There is a spare fuse mounted at the top of the circuit board.



---

## **Installation Requirements**

The Pump Control network card requires an open slot in a Prolink chassis or add-on chassis.

Configuration of the Pump control network card is accomplished using Pathway Plus.

One significant difference between the Pump control card and most other network cards is that the connecting wiring coming into the front faceplate of this card **IS NOT** intrinsically safe. This makes it imperative that the lower dividers between the Pump control card and other network cards must be installed before power is applied to the Prolink chassis.

The Prolink main data chassis power **MUST** be connected in the same phase as the dispensers in order for the Pump Control network card to sense the dispenser signal.

---

## **Installation Procedures**

### **Installation in the Prolink Chassis**

The following procedure demonstrates how to install the Pump Control network card into any open slot in the Prolink main data chassis.

**Step 1:** Disconnect power to the Prolink main data chassis at the electrical panel and the On-Off switch on the Prolink main data chassis power supply circuit board. (Refer to figure 2.1) Open the network card access panel and select an open slot for installation. Refer to figure 2.2.

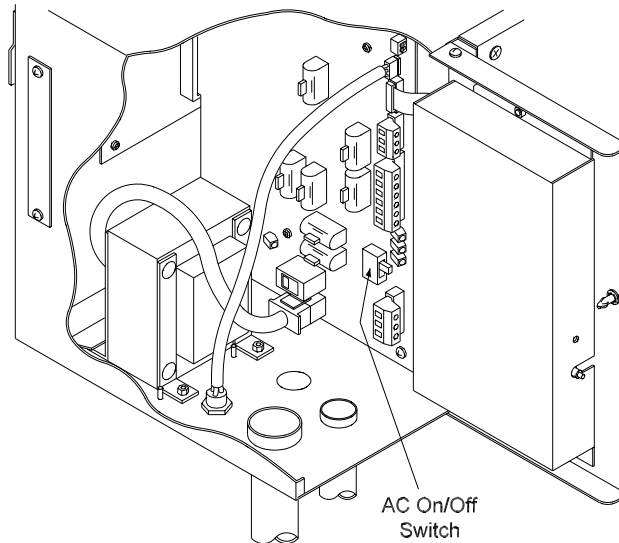


Figure 2.1 Prolink Chassis On-Off Switch

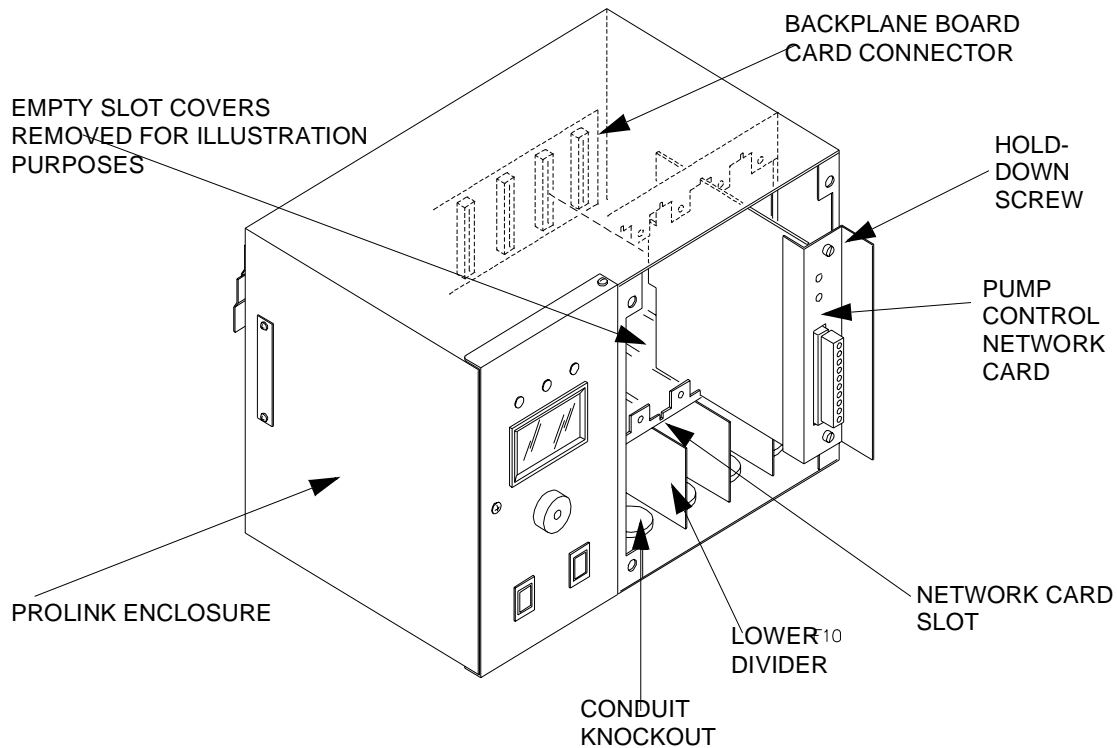
**Step 2:** Remove one of the conduit knockouts underneath the selected slot and install a conduit connector and conduit.

**WARNING!**

The short dividers in the lower section of the chassis may be removed for access, but **MUST** be reinstalled to maintain intrinsic safety and complete the installation.

Failure to reinstall the lower dividers constitutes a hazard that **CAN** cause **SEVERE** personal injury, death, or substantial property damage **IF IGNORED.**

**Step 3:** Remove slot cover from the selected slot.



**Figure 2.2 Installation of the Pump Control network card**

**Step 4:** Slide the Pump Control network card into the selected slot. Note the orientation of the card in *figure 1.2*. Make sure that the card connects completely with the backplane board. Tighten the two hold-down thumbscrews to fully secure the card in position.

**Notice**

Do not attempt to install the card backwards.

**Step 5:** Pull the necessary dispenser return wires and pump relay wires through conduit and connect to the correct terminal on the Pump Control card. See *figure 1.3*.

**Step 6:** Close and fasten the network card access panel.

**Step 7:** Reconnect power to the Prolink chassis.

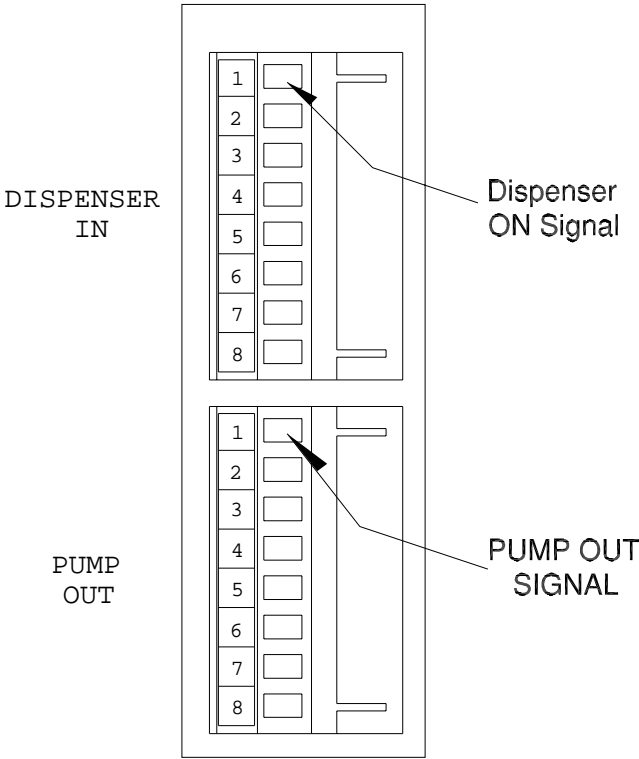


Figure 2.3 Pump network card input and output connections



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## ***Pump Control Network Card configuration worksheet information***

When installing the Pump network card, the following information must be recorded on the Prolink Installation and Configuration Worksheet.

- **Card serial number**
- **Card date of manufacture**
- **Card neuron ID number**
- **Part Number**
- **Card chassis number**
- **Card slot number**

This information should be entered on the Prolink Installation and Configuration Worksheet. (WAF03) Refer to *figure 2.4*

***Prolink Installation and Configuration Worksheet Sample***

Pump Control network card required information.

**Prolink Configuration Worksheet– SAMPLE**

Chassis # _____		Slot 1
<b>Type of Network Card Installed</b>		PUMP CONTROL NETWORK CARD _____ 12/15/98 _____ 123456789 _____ 12345678910 _____ REXXX-XXX _____
<b>CHANNEL 1 PROBE/SENSOR TYPE</b>		Unleaded Dispenser Return _____ _____ Unleaded Reg Relay _____ _____
<b>CHANNEL 2 PROBE/SENSOR TYPE</b>		
<b>CHANNEL 3 PROBE/SENSOR TYPE</b>		
<b>CHANNEL 4 PROBE/SENSOR TYPE</b>		

Figure 2.4 Pump Control network card required information





---

## ***Installation Information and Notes***

This section contains general information and specific notes about installation in certain applications.

- 1 Any transducer in the system can be matched to any of the eight input and output channels using Pathway Plus.
- 2) If a line leak is detected, the Pump Control network card will put the pumps into a total shutdown state which will not allow the pumps to run.
- 3) The dispenser input voltage is isolated from the output voltage. The output voltage is pulled from the Pump Control network card's connection on the Prolink chassis backplane board.
- 4) No configuration is needed to operate the Pump Control network card on either 110/220 VAC, however, if the Prolink chassis is set to operate on 110 VAC, the Pump Control network card cannot directly drive 220 VAC relays.
- 5) In domestic (USA) 110 VAC applications using 220 VAC Big Flow pump relays, the relay coil needs to be changed out.

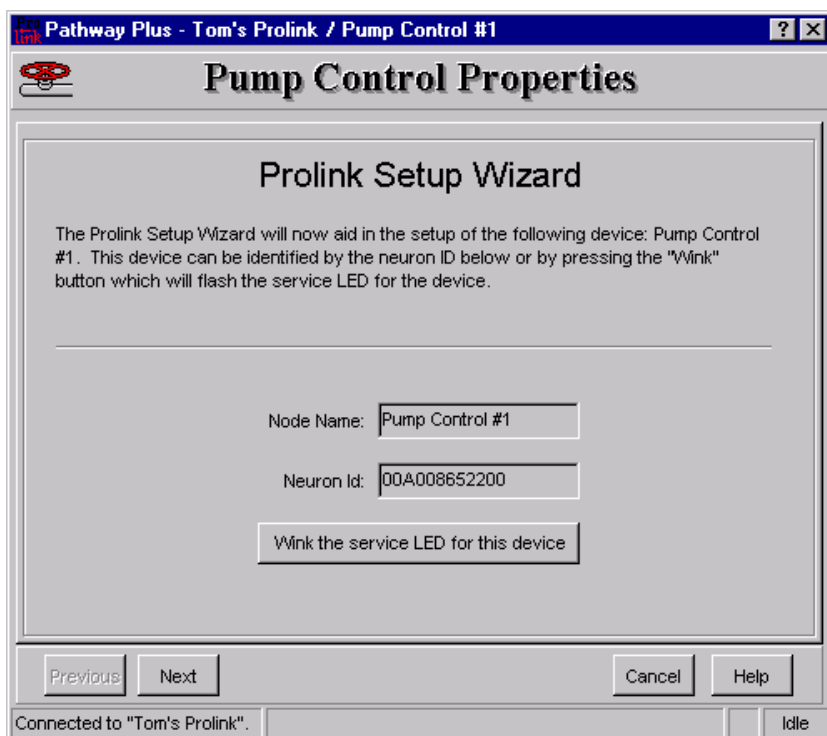
## Chapter 3: Pathway Plus Setup

### *This Chapter Explains:*

- Pump Control Card Setup in Pathway
- Setup of Node Object
- Setup of Pump Control Objects

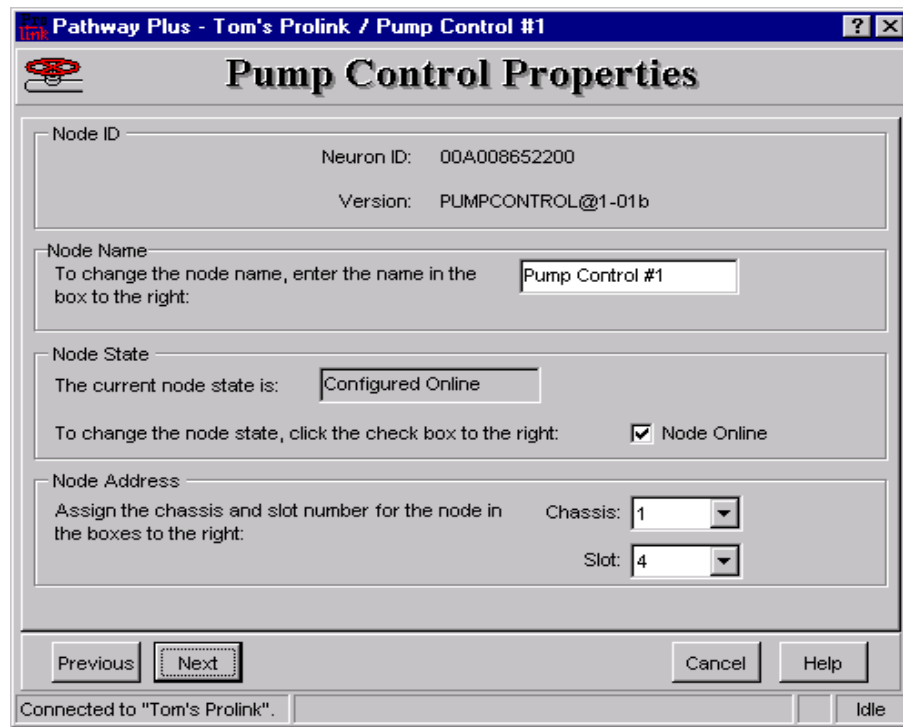
## Pump Control Network Card Setup in Pathway

### Setup of Node Object



**Wink:** Click on this button to blink the service LED on the node. This is helpful in situations where there is more than one network card of the same type installed in the same chassis. Blinking this LED will identify the specific card that is being configured.

The **node name** represents the current name of the card you will be working with. The **neuron id** is a permanent number, and it does not change.



**Pathway Plus - Tom's Prolink / Pump Control #1**

### Pump Control Properties

Node ID: 00A008652200  
Neuron ID: 00A008652200  
Version: PUMPCONTROL@1-01b

Node Name: To change the node name, enter the name in the box to the right: Pump Control #1

Node State: The current node state is: Configured Online  
To change the node state, click the check box to the right:  Node Online

Node Address: Assign the chassis and slot number for the node in the boxes to the right: Chassis: 1 Slot: 4

Previous Next Cancel Help

Connected to "Tom's Prolink". Idle

**Node ID:** The neuron ID is a read only field that contains a unique set of numbers and letters that identify the device (no two Prolink devices have the same neuron ID). The neuron ID should match the printed label found on the device as well as the corresponding label on the configuration worksheet.

**Node Name:** Each device has a default name assigned to it. If you want to change this name, enter it in this field. The name in this field will be displayed by Pathway Plus anywhere this node appears (max. of 12 characters).

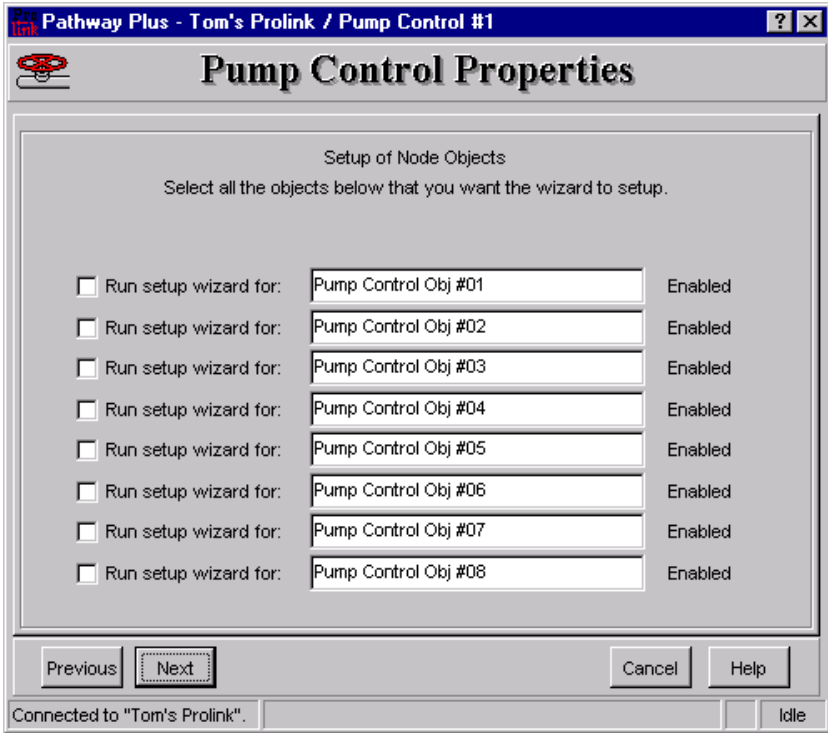
**Node State:** Current Node State: This is a read only field that shows the current node state.

**Online Configured:** This is the normal operating state. In this case the application is loaded, configured, and connected to the Prolink network.

**Soft Offline:** In this case the application is loaded and configured, however the application is not running. This state would be used when performing service at the station to prevent this node from going into alarm. For example, a mag node would be taken offline to allow the mag probe to be pulled from the tank for inspection or replacement without sending an alarm to the network.

**Node Online:** In most cases this check box should remain selected. To take the node offline to allow service work to be performed at the station, uncheck this box.

**Node Address:** The address is used to identify which chassis and slot the card is in. It identifies the physical location.



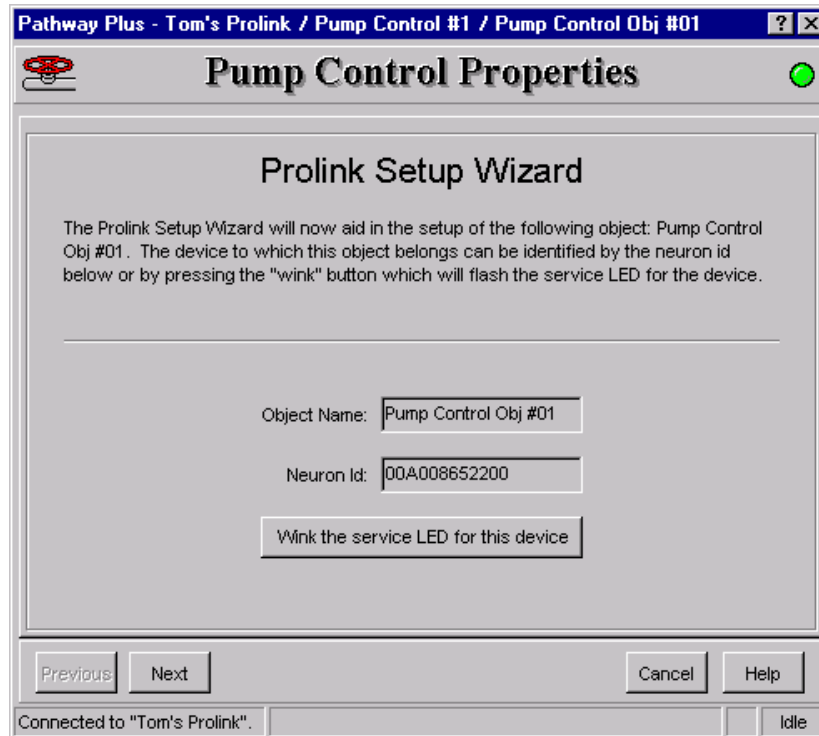
**Setup of Node Objects:** This screen allows the user to select the pump control objects that need to be configured. The Pump Control Card has up to eight pump control objects. Each object represents an input signal from the dispensers and an output relay used to turn on the appropriate pump.



You are now finished with the setup parameters for the Pump Control Node Object. To store these settings in the device select 'Finish.'

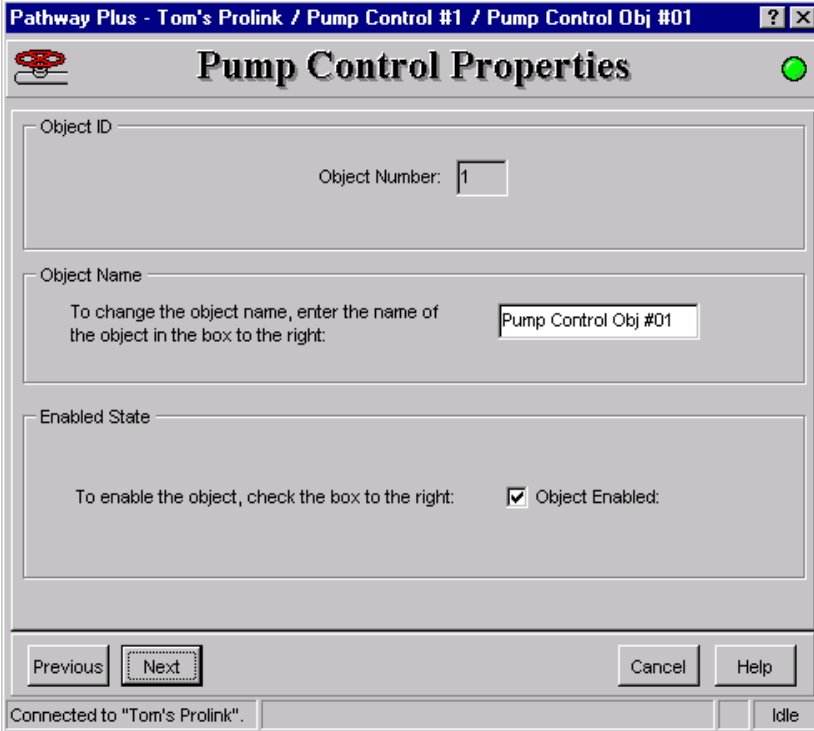
## Setup of Pump Control Objects:

If you chose to setup any pump control objects the following dialogs will be displayed for each object.



The **node name** represents the current name of the card you will be working with. The **neuron id** is a permanent number, and it does not change.

The **wink** button is a blink service to the LED on the node. This is helpful in situations where there is more than one network card of the same type installed in the same chassis. Blinking this LED will identify the specific card that is being configured.



Pathway Plus - Tom's Prolink / Pump Control #1 / Pump Control Obj #01

### Pump Control Properties

Object ID

Object Number: 1

Object Name

To change the object name, enter the name of the object in the box to the right: Pump Control Obj #01

Enabled State

To enable the object, check the box to the right:  Object Enabled

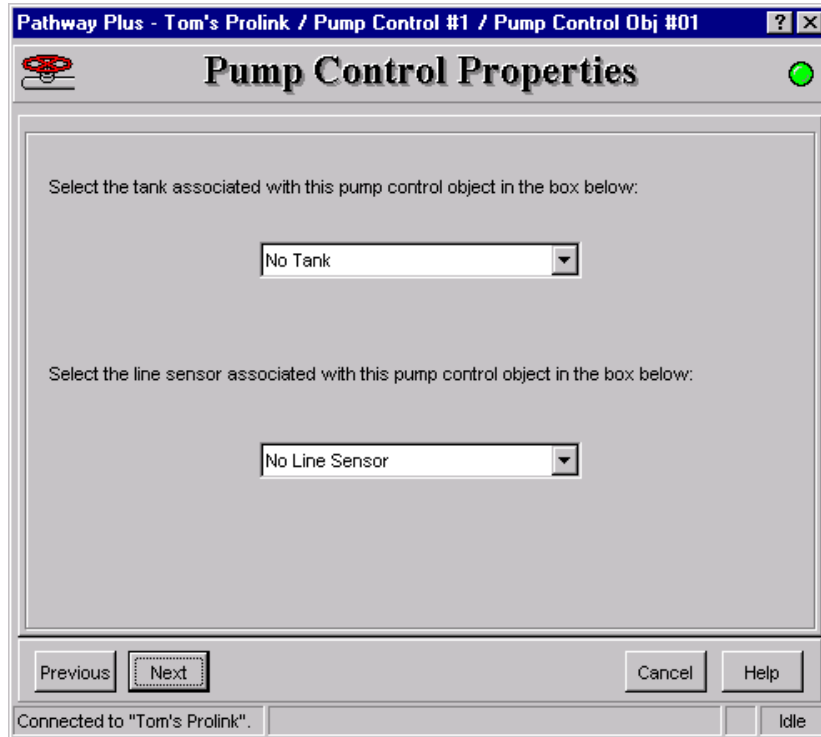
Previous Next Cancel Help

Connected to "Tom's Prolink". Idle

**Object ID** is uniquely identified by the specific object by number in this screen. The Object ID property indicates which object is open for configuration or setup, and is a read only field.

**Object Name** displays the name of the object. This field may be changed (max. 12 characters) or left at default.

**Enabled State** box must be 'checked' to enable operation of the Pump Control Object.



Pathway Plus - Tom's Prolink / Pump Control #1 / Pump Control Obj #01

### Pump Control Properties

Select the tank associated with this pump control object in the box below:

No Tank

Select the line sensor associated with this pump control object in the box below:

No Line Sensor

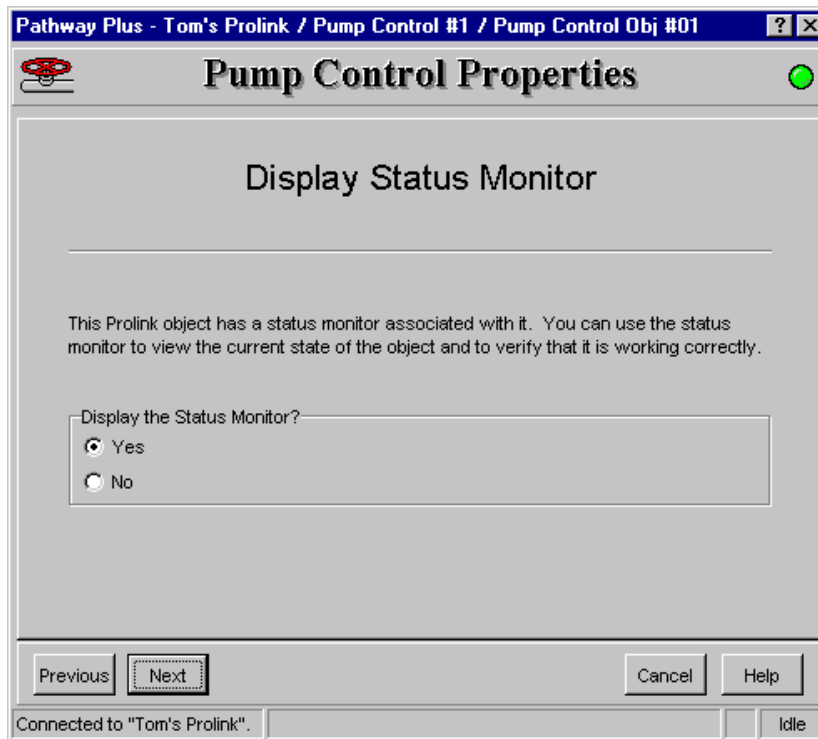
Previous Next Cancel Help

Connected to "Tom's Prolink". Idle

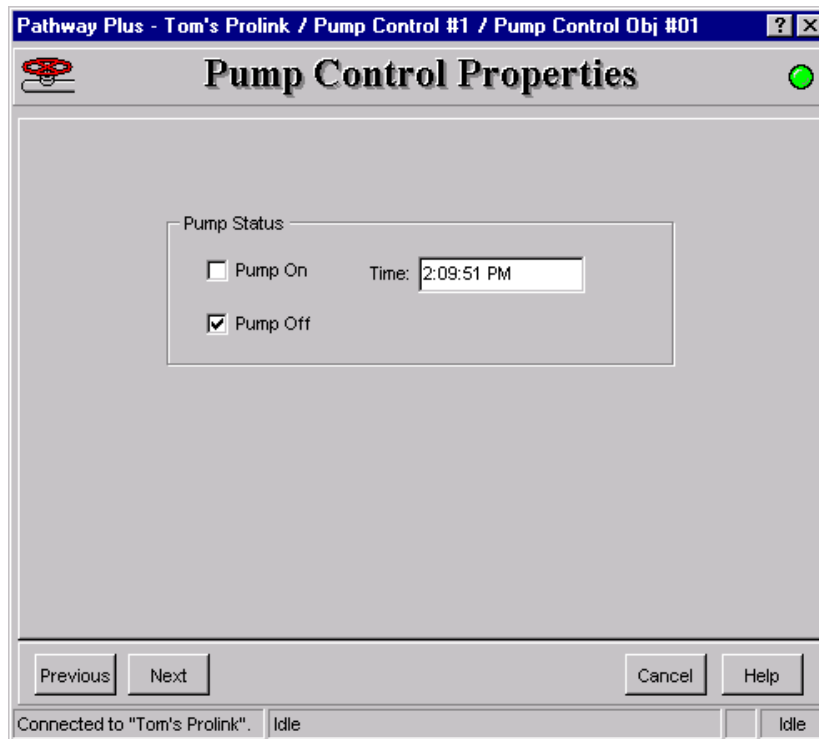
**Select Tank:** If a tank gauge card such as the Mag card, Sonic card, or Generic Tank card is installed in this Prolink you will need to select the tank that is associated with this object. This will be the tank that contains the pump that will be turned on by this object.

**Select Line Sensor:** Since you will have a sensor card with pressure transducers enabled, the proper transducer for this object needs to be selected. Select the transducer that is associated with the pump for this object.

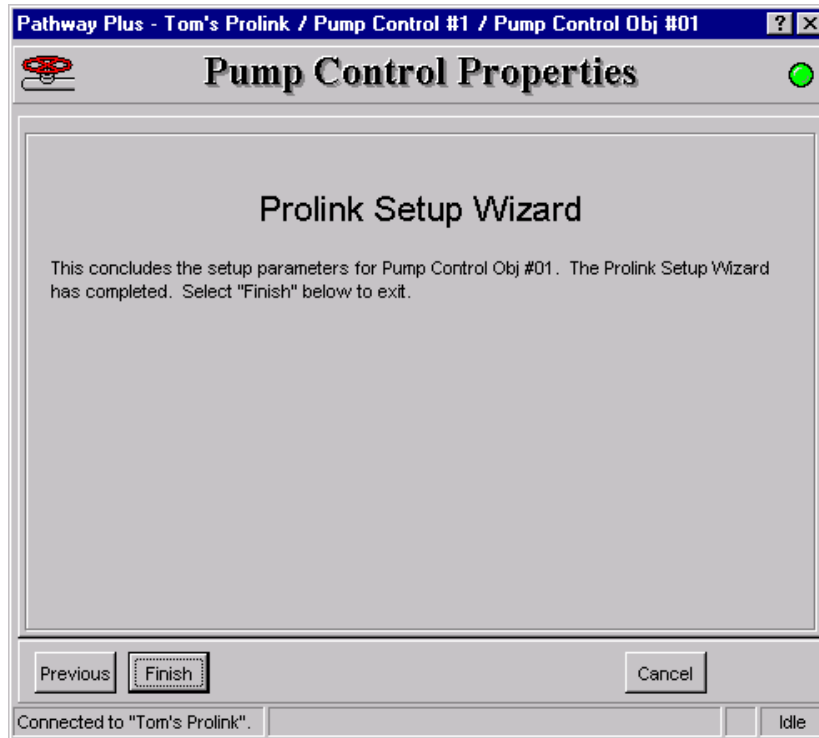




By displaying the Status Monitor you will be able to verify that the Pump Control Object is working properly.



When the appropriate dispenser signal turns on and the sensor card has not detected a leak the corresponding pump will turn on. When the dispenser signal turns off or a leak is detected the pump will turn off.



Setup for this object is complete. These dialogs will repeat for each object you have selected to setup.

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