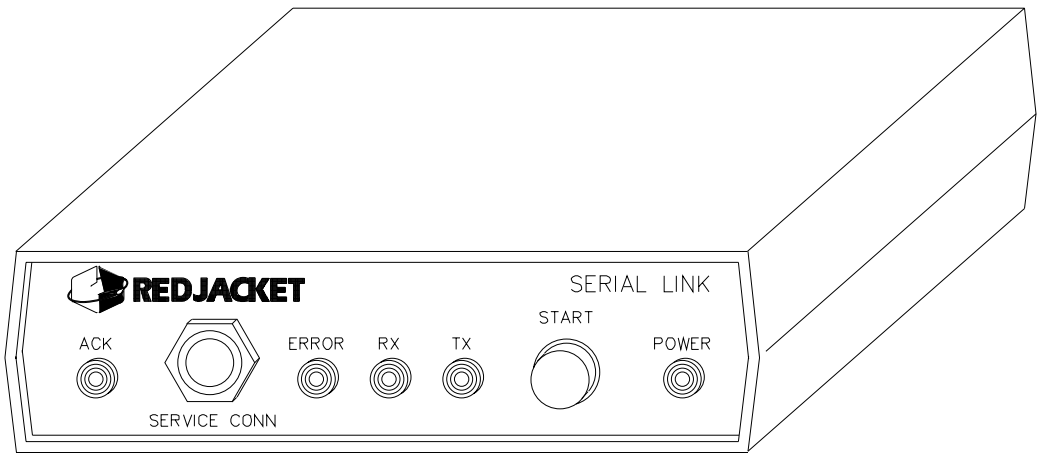
Prolink

Serial Link
Generic Tank Mode
Installation Manual



REDJACKET

Prolink Fuel Management System

RE260-337
Rev C
July '00

Serial Link Generic Tank Mode Installation Manual
RE260-337 • Rev C • July '00

Certifications and Listings

Marley Pump Company is ISO 9001 certified.

The 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 and typographical conventions used, and defines vital terminology.

Organization

This manual is organized into three chapters:

Chapter 1: Serial Link Overview and Installation
Chapter 2: Connecting to a Network
Chapter 3: Pathway Plus Setup

It also includes a Parts List and an Index.

Typographical Conventions

The various symbols and typographical conventions used in this manual are described here.

Numeric Formats	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).

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: Overview and Installation

This Chapter Explains

- **Overview**
- **System Description**
- **Installing the Serial Link**

Overview of the Serial Link, Generic Tank Mode

The Serial Link, Generic Tank Mode provides the ability to connect a Prolink network to a Veeder/Root tank gauging system to allow the network to read and store basic tank information. The specific information accessed by the Generic Tank network card includes inventory readings, deliveries, alarm conditions (including theft, high water, low product, and high product), and leak tests.

The Serial Link uses a RS232 DB9 serial connection to access this information from the Veeder/Root unit.

System Description

- The Serial Link is housed in a small enclosure (approx. 6 in. X 6 in.) which can be wall mounted with the supplied bracket, or located on a desk or shelf. Multiple Serial LInks may be used.
- 6VDC power for the Serial Link is supplied by the included 120VAC 60Hz adapter (6VDC output). For international applications, a 220VAC 50Hz model is available.

Installing the Serial Link

Mount the Serial Link enclosure within 9-ft. (depending on cable length) of the tank gauge and within 6-ft. of an AC electrical outlet. Use the wall mount bracket provided or locate the Serial Link on a desk or shelf. Be sure both front and rear panels are accessible. If using the wall mount bracket, attach the Serial Link to the bracket with the two screws provided (wall mounting hardware not included). Do not plug AC adapter into electrical outlet at this time.

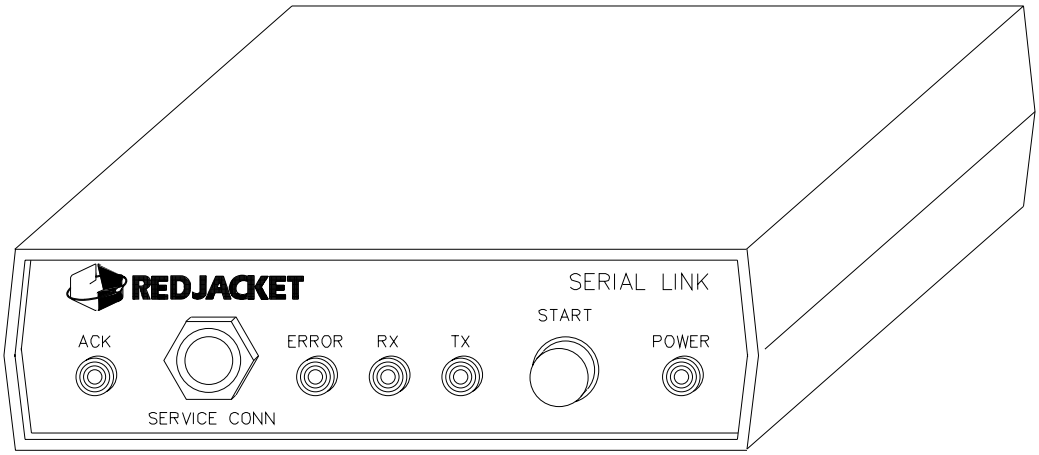


Figure 1.1 Serial Link, Front View

ACK Light: A red LED that reflects the state of the application (i.e., service acknowledge).

Service Conn: Jack for making a connection between a PCC-10 PCMCIA card on a laptop computer and the Serial Link to access the Prolink network.

Error Light: This LED will illuminate if there is a problem transmitting or receiving data to the RS232 port. This LED display will clear if power is switched off and back on or the next successful data exchange.

Receive (RX) Light: A red LED illuminates when the Serial Link is receiving data over the RS232 link.

Transmit (TX) light: A red LED illuminates when the Serial Link is sending data over the RS232 link.

Power Light: A green LED that is lit when the Serial Link is energized.

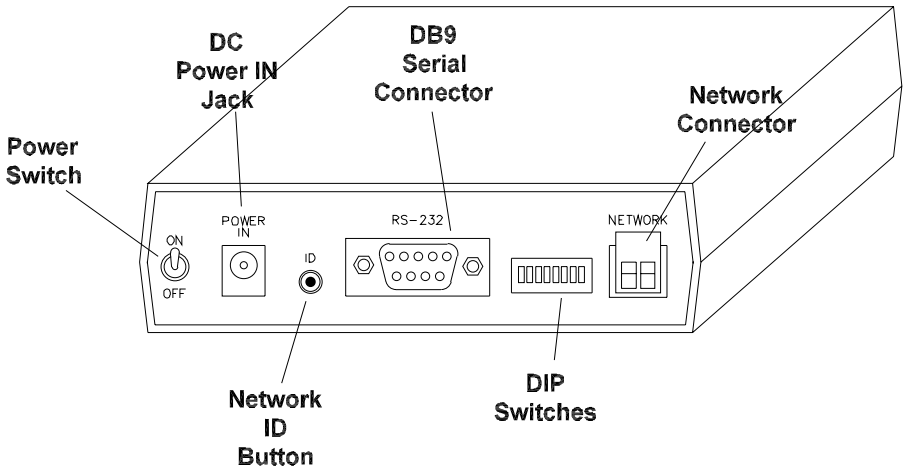


Figure 1.2 Serial Link, Rear View

On/Off switch: The toggle switch that turns the unit on or off.

Power In Jack: Jack for supplying DC power to the unit.

ID Button: This service pin is used to identify the individual Serial Link to the network configuration software.

DIP switches: used to configure network termination and battery backup.

Network Connector: 2-pin Phoenix type network cable connector.

DIP Switch Settings

The DIP switches are arranged from 1-6, left to right.

Position	Switch Position	Description
1	Down	Not Used
	Up	
2	Down	Not Used
	Up	

3	Down	Not Used
	Up	
4	Down	Not Used
	Up	
5	Down	Network termination is enabled
	Up	Network termination is disabled
6	Down	Network type is single-ended termination
	Up	Network type is double-ended termination

Notice	DIP switch positions 1, 2, 3, and 4 are not used for the Generic Tank application.

Chapter 2: Connecting the Generic Tank Serial Link

This Chapter Explains

- **Network Connections**
- **Serial Link, Generic Tank Application Connections**
- **Connecting the Serial Link to the Tank Gauge System**

Network Connections

The Serial Link, Generic Tank Application is connected to the Prolink Network through the two terminal network connectors located on the back of the Serial Link enclosure (refer to figure 2.1). The Serial Link can also function as a network termination for the Prolink Network.

*Network wiring is polarity independent

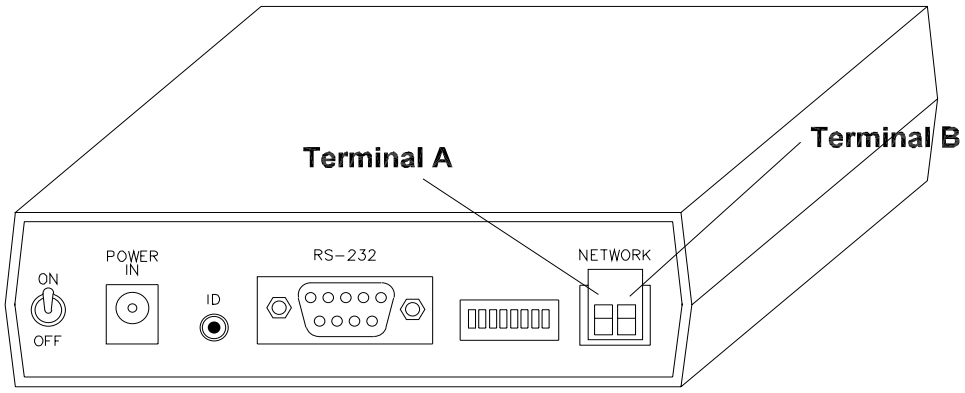


Figure 2.1 Serial Link Network Terminator Connector

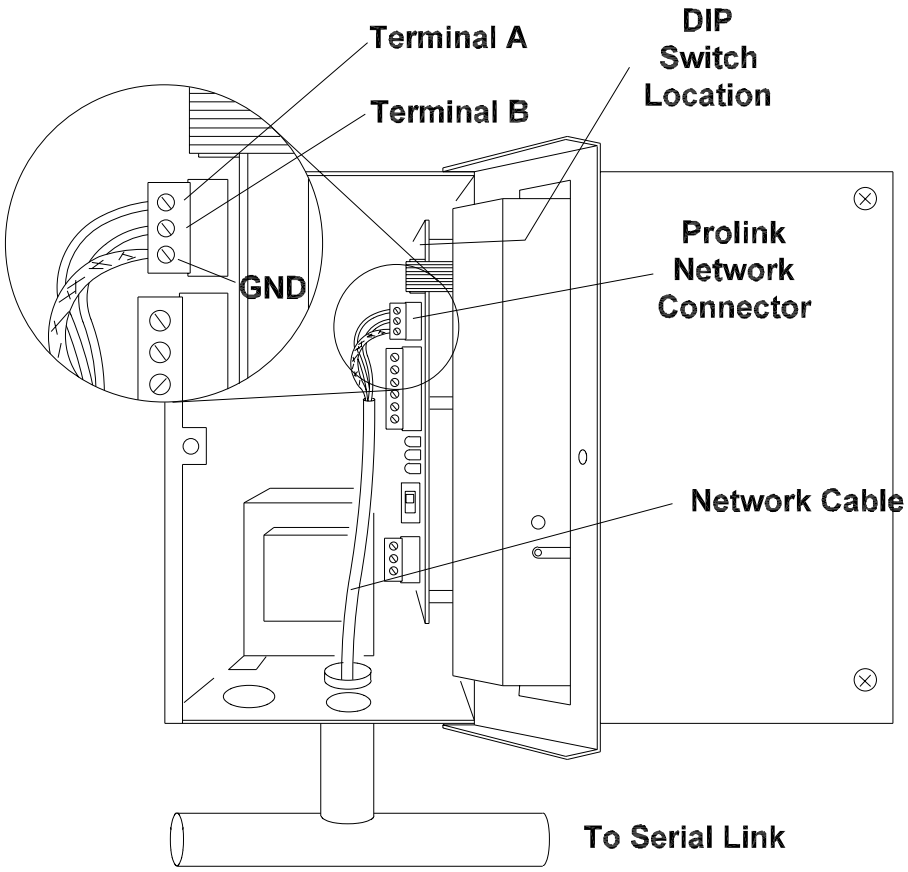


Figure 2.2 Network cable connectors to Prolink

Serial Link, Generic Tank Application Connections

The Serial Link Generic Tank Application needs to be connected to both the Prolink Network (via the two wire network cables) and to the Tank Gauge System (via the RS-232 Port).

Connecting the Serial Link to the Prolink

The following procedure should be followed when connecting the Serial Link to the Prolink chassis (refer to figure 2.2).

Notice *Make sure that the Red Jacket Network cable is used (RJ400-680-5).

Step 1: Route the network cable into the Prolink enclosure through a free knockout on the bottom of the enclosure.

Step 2: Connect the two network cable conductors to the network terminals A and B on the Prolink power supply board. Polarity is not important. See figure 2.2.

Step 3: Route the network cable from the Prolink to the Serial Link.

Step 4: Connect the two network cable conductors to the A and B terminals on the Serial Link. Polarity is not important. See figure 2.1.

Step 5: After connecting the cables, connect the power supply cord and turn the Serial Link on by moving the toggle switch located on the back of the enclosure to the 'ON' position.

Notice	Single-ended termination on Serial Link is enabled by setting DIP switches 5 and 6 to the down position.

Connecting the Serial Link to the Tank Gauge System

The tank gauging device is connected to the DB9 male serial port marked 'RS232' on the rear panel of the Serial Link. The Serial Link RS232 port is shipped from the factory configured for DTE. All connections discussed in this manual assume that the Serial Link remains configured for DTE.

The Serial Link can be changed to DCE by moving jumper block JP1 from the DTE to the DCE position, but this changes the context of the connector pins. Changing to DCE is comparable to adding a 'null modem' adapter.

DTE vs DCE
Connector Pin Out

Pin #	DTE	Direction	Pin #	DCE	Direction
1	Carrier Detect (DCD)	In	1	Carrier Detect(DCD)	Out
2	Receive (RXD)	In	2	Transmit (TXD)	Out
3	Transmit (TXD)	Out	3	Receive (RXD)	In
4	Terminal Ready (DTR)	Out	4	Terminal Ready (DTR)	In
5	Signal Ground (SG)	---	5	Signal Ground (SG)	---
6	Modem Ready (DSR)	In	6	Modem Ready (DSR)	Out
7	Request to Send (RTS)	Out	7	Request to Send (RTS)	In
8	Clear to Send (CTS)	In	8	Clear to Send (CTS)	Out
9	Ring Indicator (RI)	In	9	Ring Indicator (RI)	In

The Generic Tank application currently uses pins 2, 3, 4, and 5. No ‘loop-back’ connections are necessary for Generic Tank to operate. Therefore, only three pins (2,3,5) need to be connected (three wire interface) to the tank gauge. Additional pins may be connected, but are ignored by the Generic Tank application.

In most cases standard off the shelf ‘null modem’ cabling can be used to connect the Serial Link to the tank gauge device. Many tank gauge device manufacturers offer cables and connectors ready made to connect to a tank monitor which can be used. The tank monitor end of the cabling may be a DB25 male connector. If so, a DB25 female to DB9 female adapter will be necessary to connect to the Serial Link.

Make sure that the adapter has screws or thumbscrews at the DB9 side so that a secure connection can be made

In situations where cables and connectors are made up on site, here is the connection scheme:

Serial Link		Tank Gauge
TXD (Pin 3)	>	RXD
RXD (Pin 2)	<	TXD
SG (Pin 5)	<>	SG
Optional: DTR (Pin 4)	>	DSR or loop back connection

Any loop-back connections required by the tank gauge device should be made on its end of the cable. Serial Link DTR signal can be used to drive DSR or loop-back pins at the tank gauge device.

Before making the RS232 connections, make sure that the Serial Link power switch is in the OFF position (green power indicator is OFF). Consult appropriate documentation or manufacturer's technical support regarding cable specifications and connection of the tank gauge device to peripherals (Serial Link). Once connections are made and verified, turn the Serial Link power switch to the ON position (green power indicator will be ON).

Notice	Whether directly connected at Serial Link (see Connecting to a Laptop Computer), or remotely connected over a modem link, Pathway Plus must be used to configure and start the Generic Tank Serial Link. The unit will not respond to a tank monitor until configured by Pathway Plus. Refer to the Pathway Plus online help for more information on configuring the Generic Tank Serial Link.

Chapter 3: Pathway Plus Setup

This Chapter Explains:

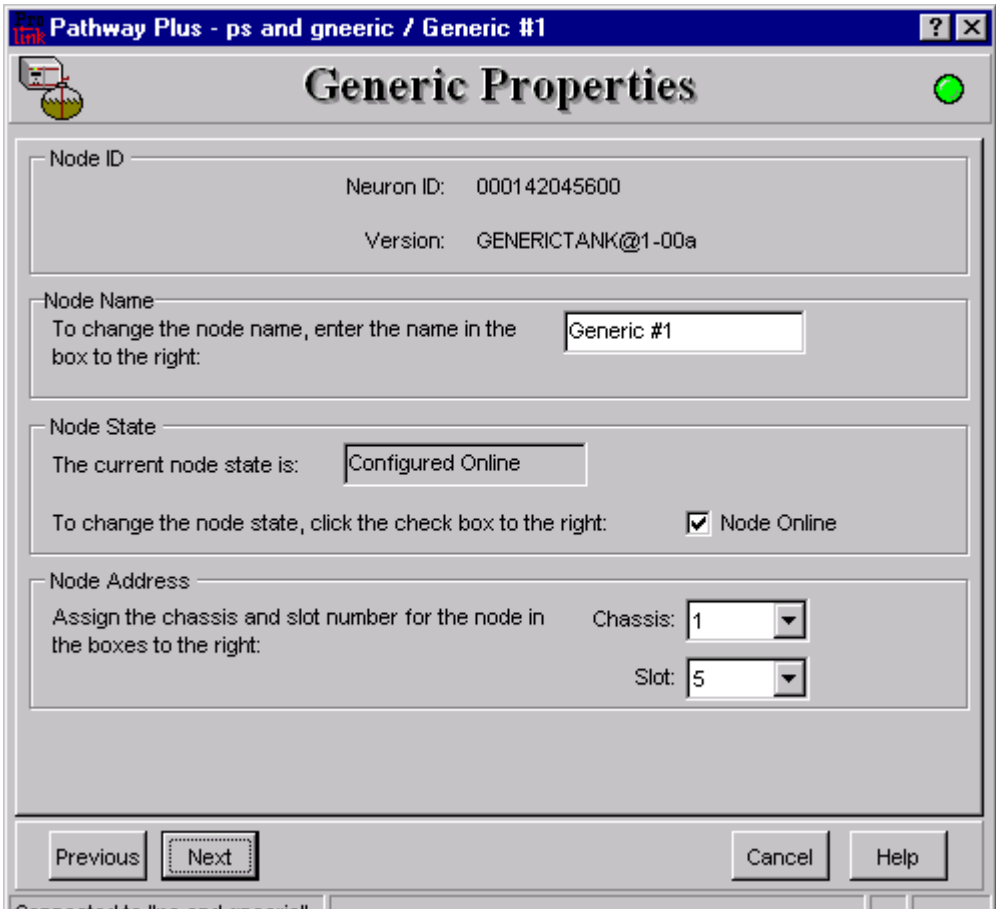
- **Serial Link Generic Tank Setup in Pathway**
- **Setup of the Node Object**
- **Setup of the Generic Tank Object**

Serial Link Generic Tank Setup in Pathway

Setup of the 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.



Node ID: Neuron 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.

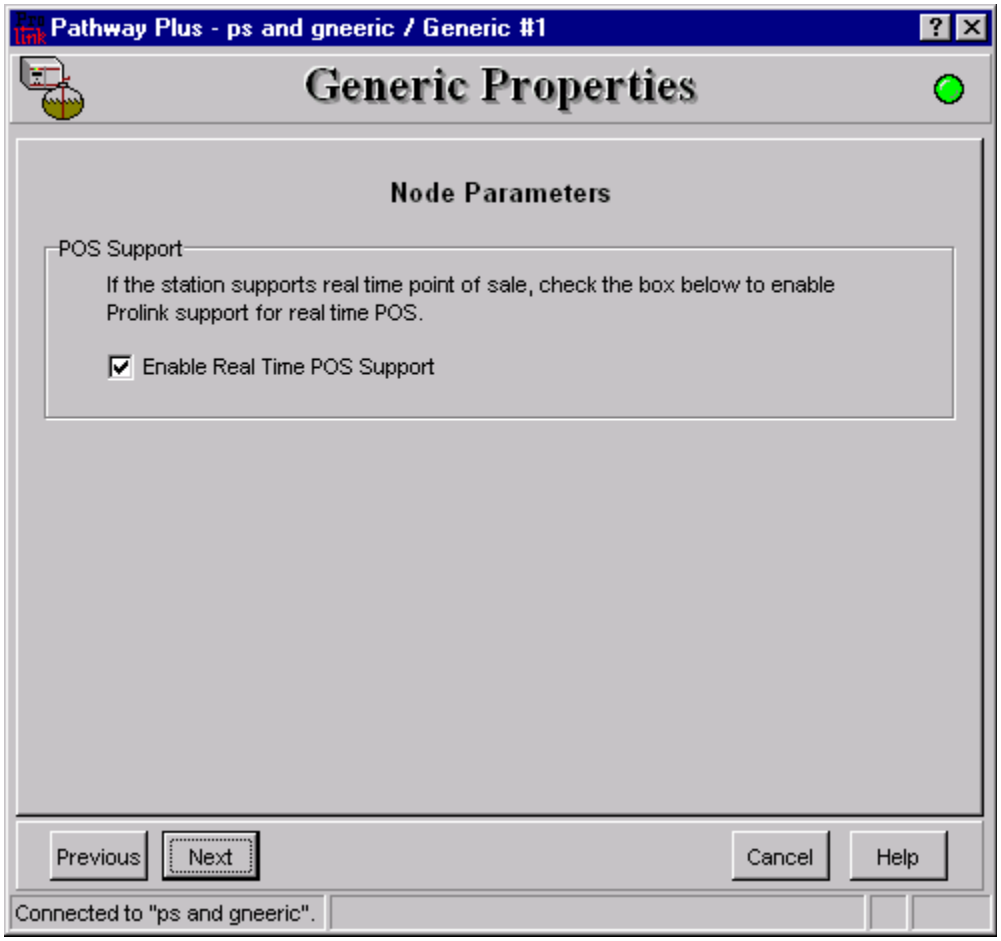
Node Name: Name: Each device has a default name assigned to it. If you want to change this name, enter it in this field. The name in this field will be displayed by Pathway Plus anywhere this node appears (Max. of 12 characters).

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

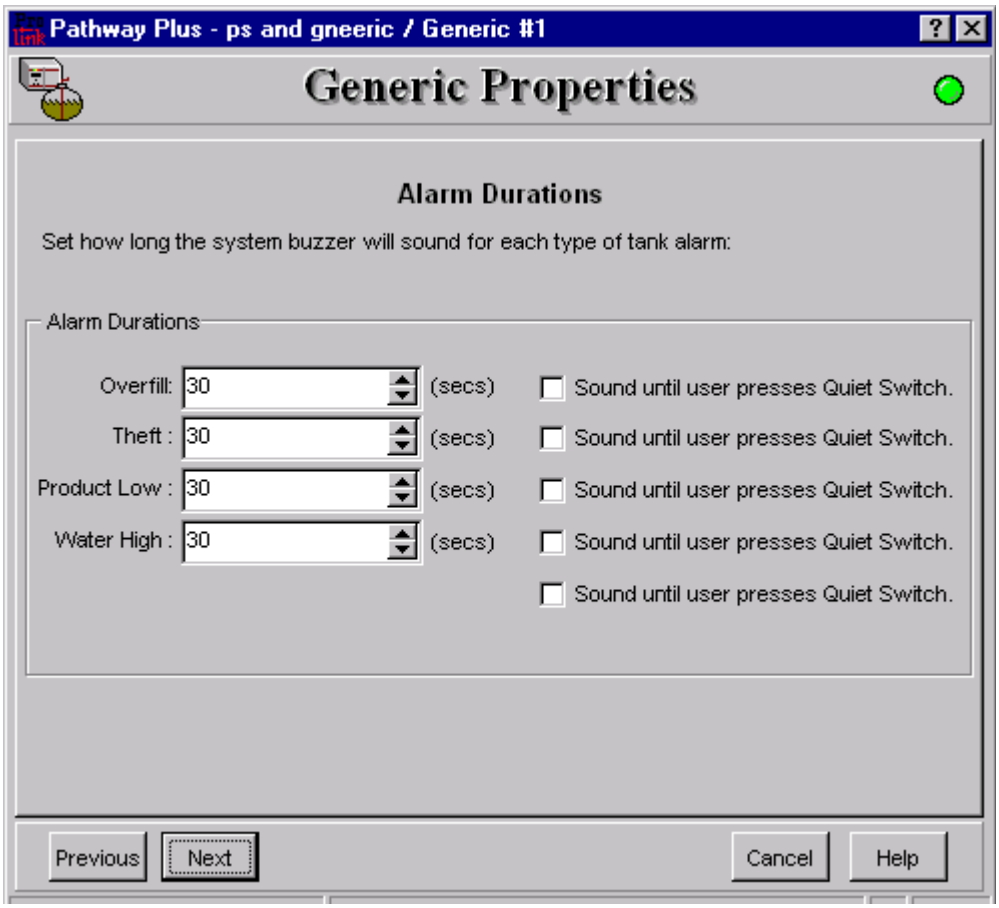
Online Configured-This is the normal operating state. In this case the application is loaded, configured, and connected to the Prolink network.

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. In most cases the **Node Online** checkbox 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.



POS Support: Check this box if the POS terminal type supports real time from the dispensers, i.e. totals can be read during the sale.



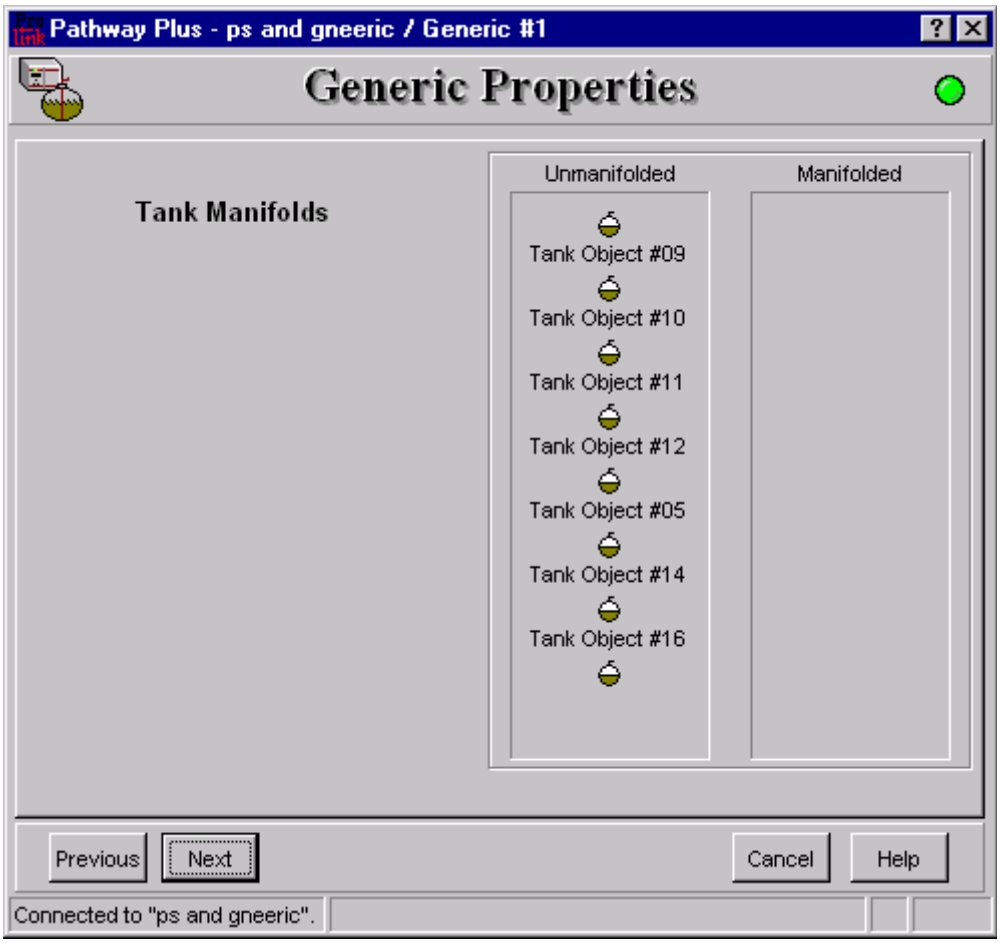
Overfill: Specify the number of seconds (O to 254) that the piezo will sound on an overfill condition.

Theft: Specify the number of seconds (0 to 254) that the piezo will sound on a theft condition.

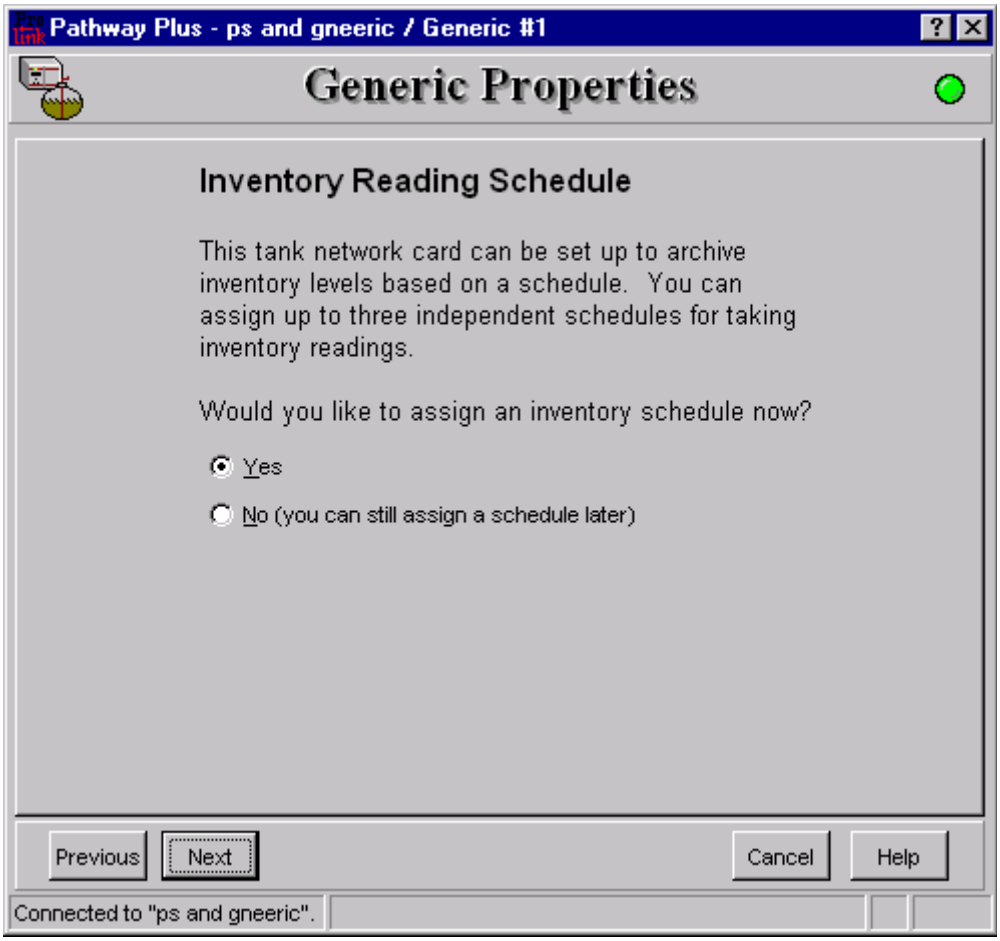
Product Low: Specify the number of seconds (0 to 254) that the piezo will sound on a low product condition.

Water High: Specify the number of seconds (0 to 254) that the piezo will sound on a highwater condition.

If the checkbox is checked, the piezo will sound indefinitely until the user acknowledges the alarm by pressing the 'Quiet' button on the Prolink Annunciator panel.

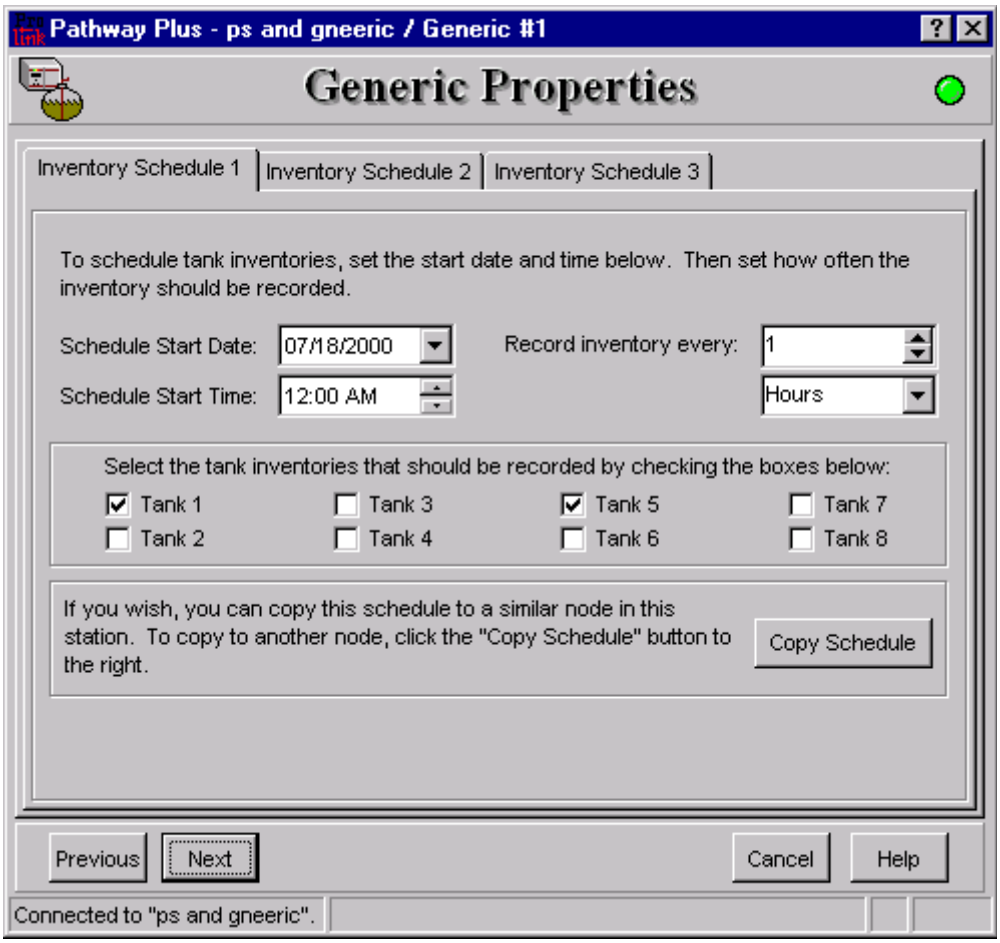


The tank manifold information is a read only screen. The tank manifolds as setup in the tank gauge will be displayed. To change these manifolds please refer to the manual for your tank gauge.



This is where the user has the choice of assigning an inventory schedule or not. This card can be set up to archive inventory levels based on a schedule. The user can assign up to three independent schedules for taking inventory readings.

Note that this is for storage only. To schedule the printout of local reports on site, set up this schedule through the printer network card/printer serial link dialog boxes.



Inventory Schedule #1:

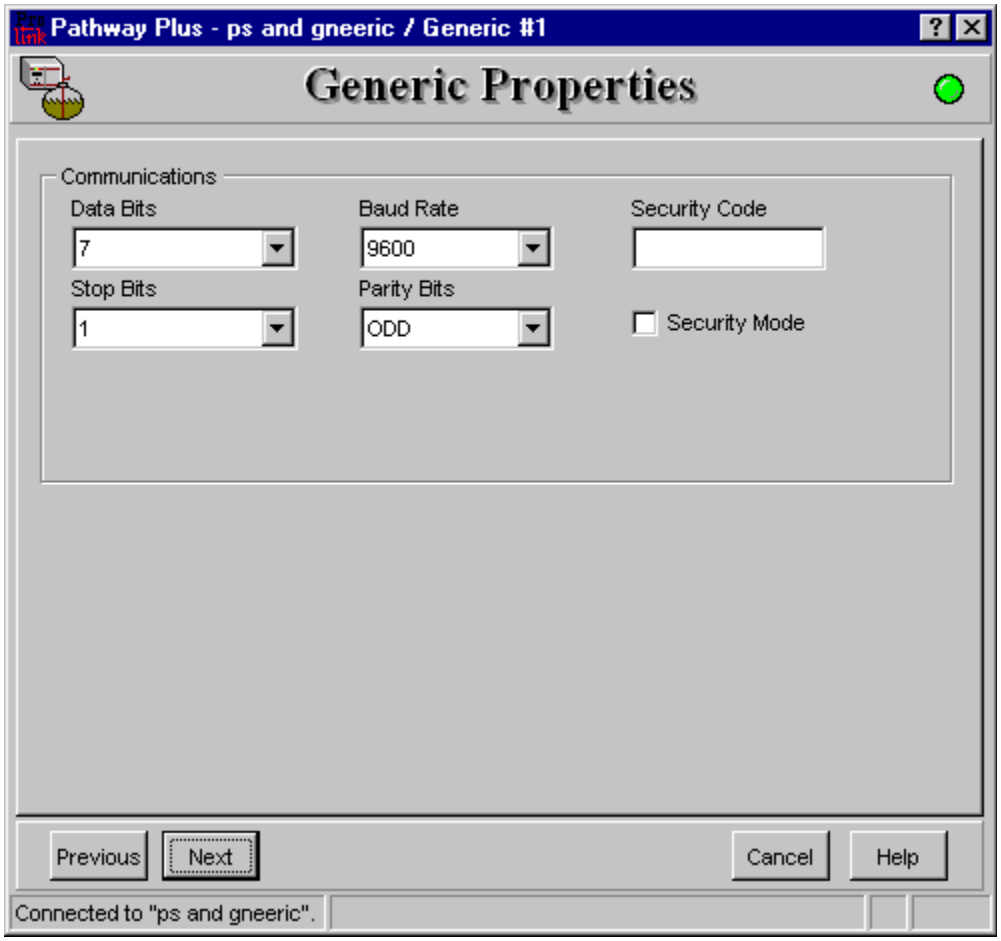
Schedule Start Date: The user can set the date of when they want inventory to begin.

Schedule Start Time: The user can set the time of when they want inventory to begin.

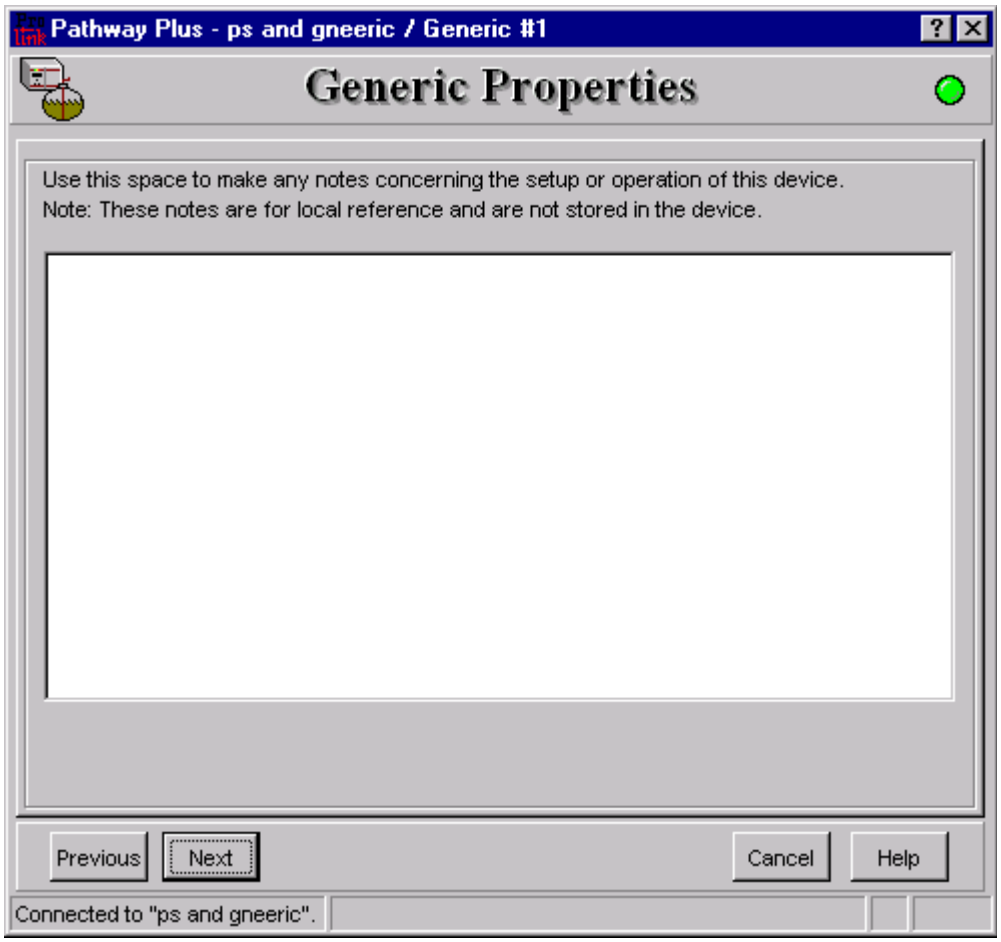
The user also has the choice of how often they want inventory checked. You can make this decision by putting your choice in the 'record inventory every' selections boxes.

The user also has the ability and option to choose which tank inventories should be recorded by checking the boxes that apply.

Copy Schedule: Allows the user to copy this schedule to a similar node in this station. To copy another node, click on 'Copy Schedule.'

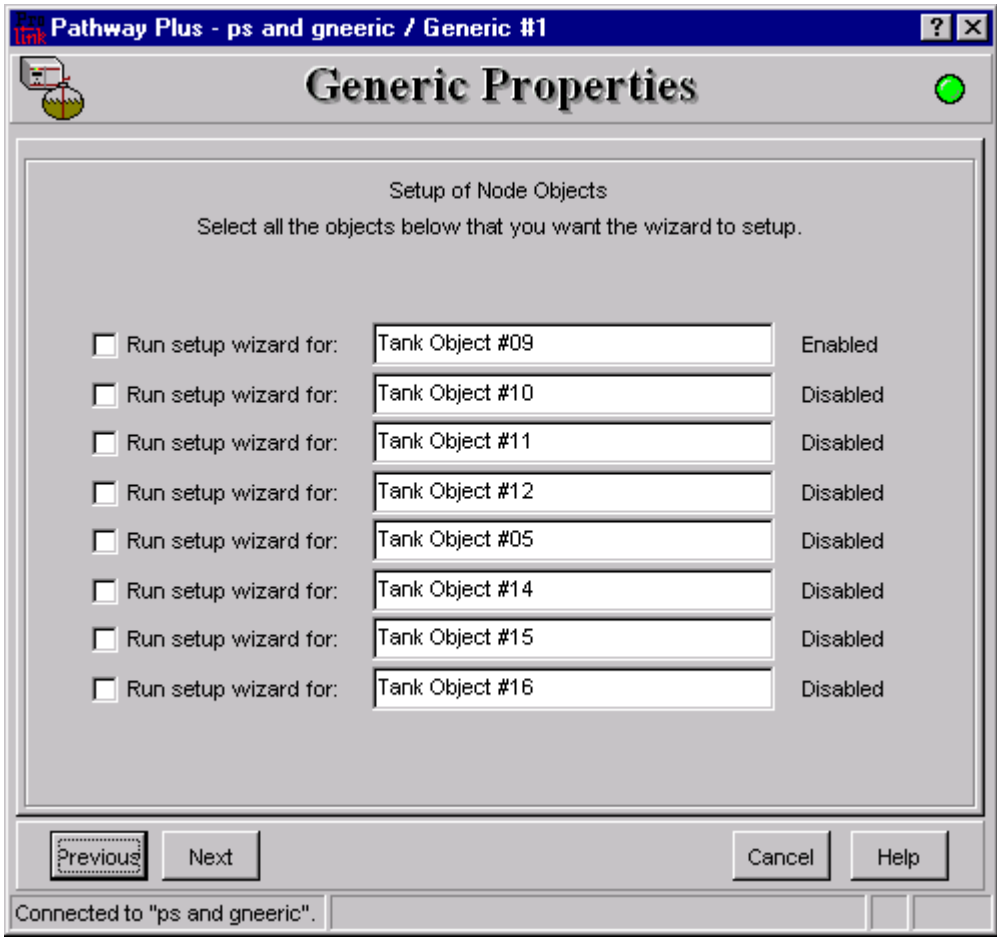


This screen allows the user to select the communications parameters of the tank gauge. The default settings are 9600 baud, 7 data bits, 1 stop bit and odd parity. It may be necessary to change these depending on the tank gauge used. Please consult the tank gauge manual for the proper settings. The security code is an optional six digit numerical code used by some tank gauges. If needed fill in this code and select security mode.



This is the user's opportunity to make any notes to have for future reference. The notes from the dialog above are locally stored on the PC in Pathway Plus, and do not get stored to the station.

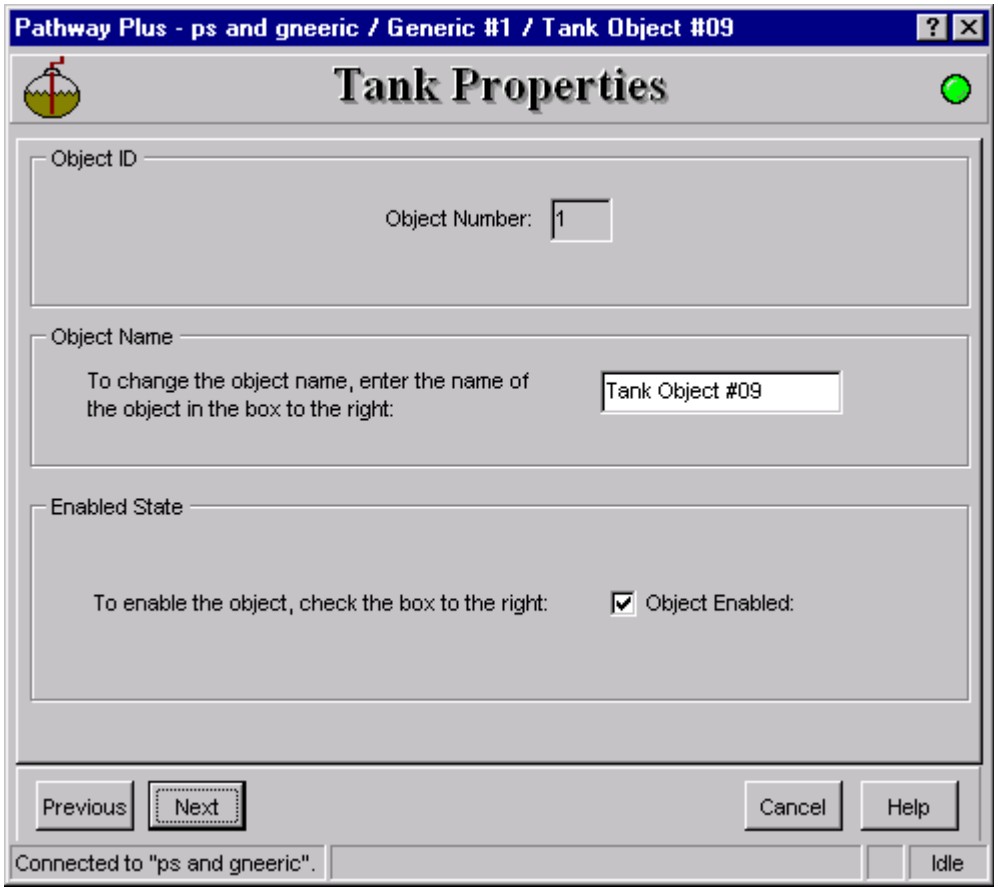
Setup of the Generic Tank Objects



This section allows the user to select which type of objects that they want the Prolink Setup Wizard to configure at this time.

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.

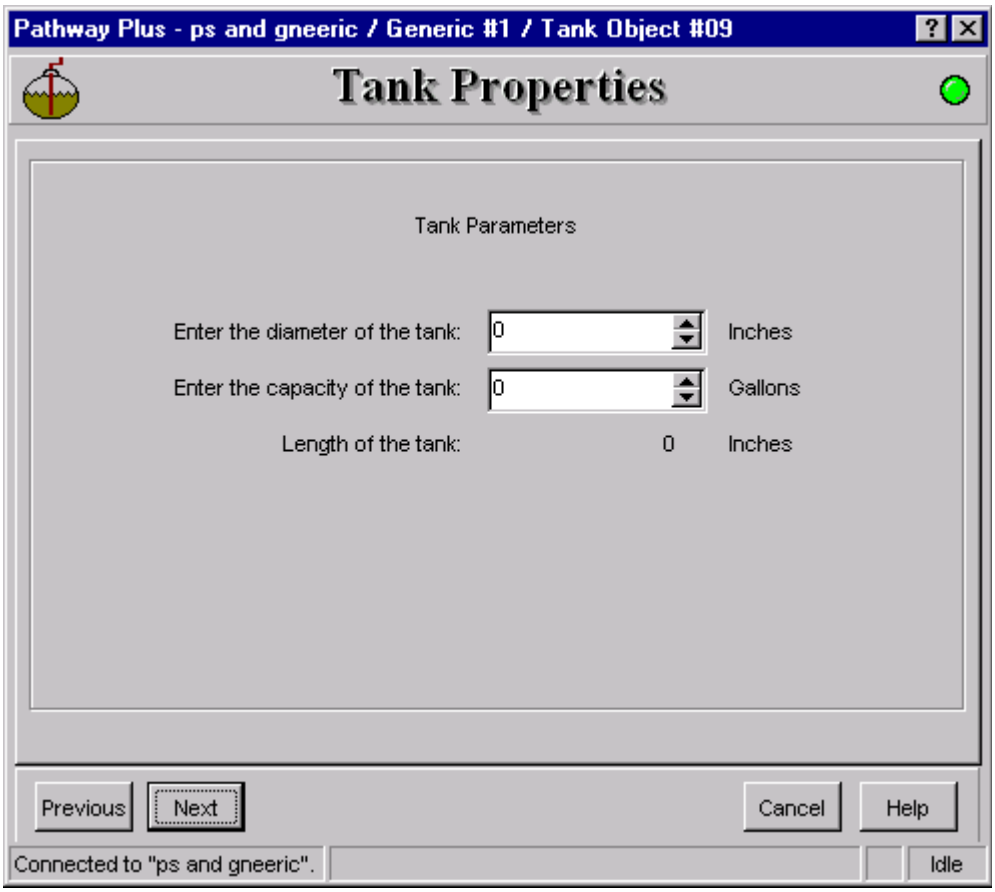
The **object name** represents the current name of the device you will be working with. The neuron id is a permanent number, and it does not change.



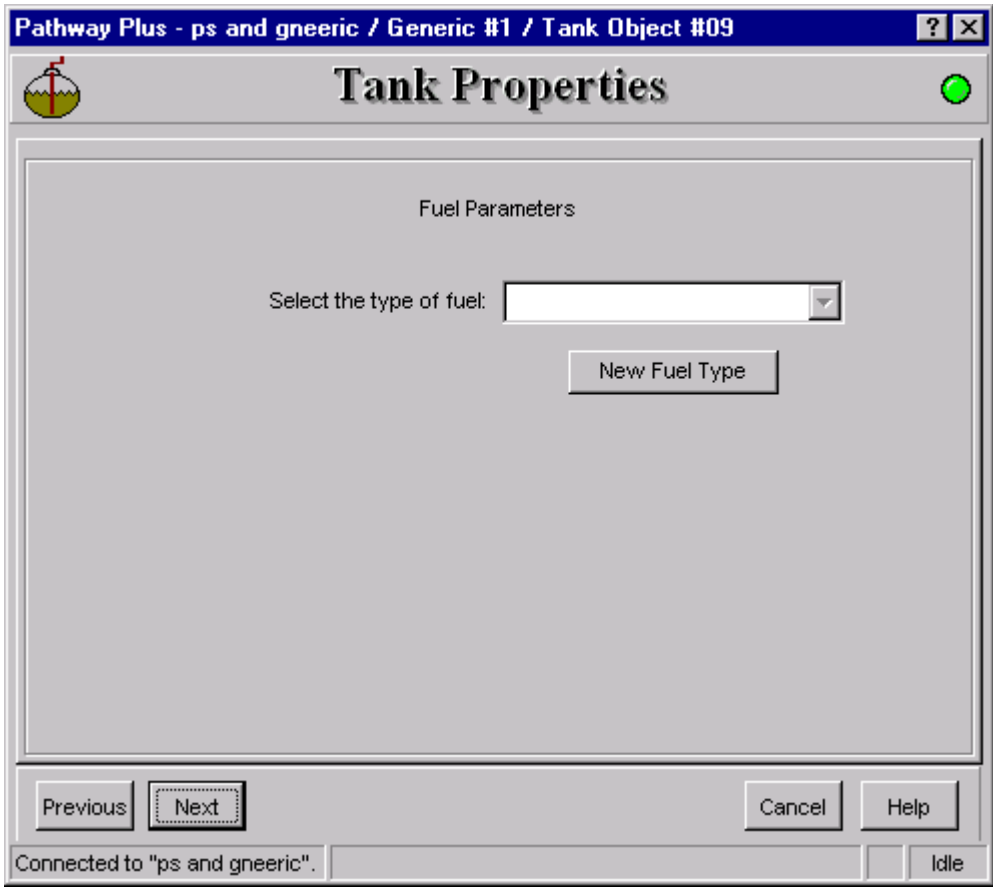
Object ID is uniquely identified by the specific object by number in this screen. The Object ID property indicates which object is open for configuration or setup, and is a read only field.

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

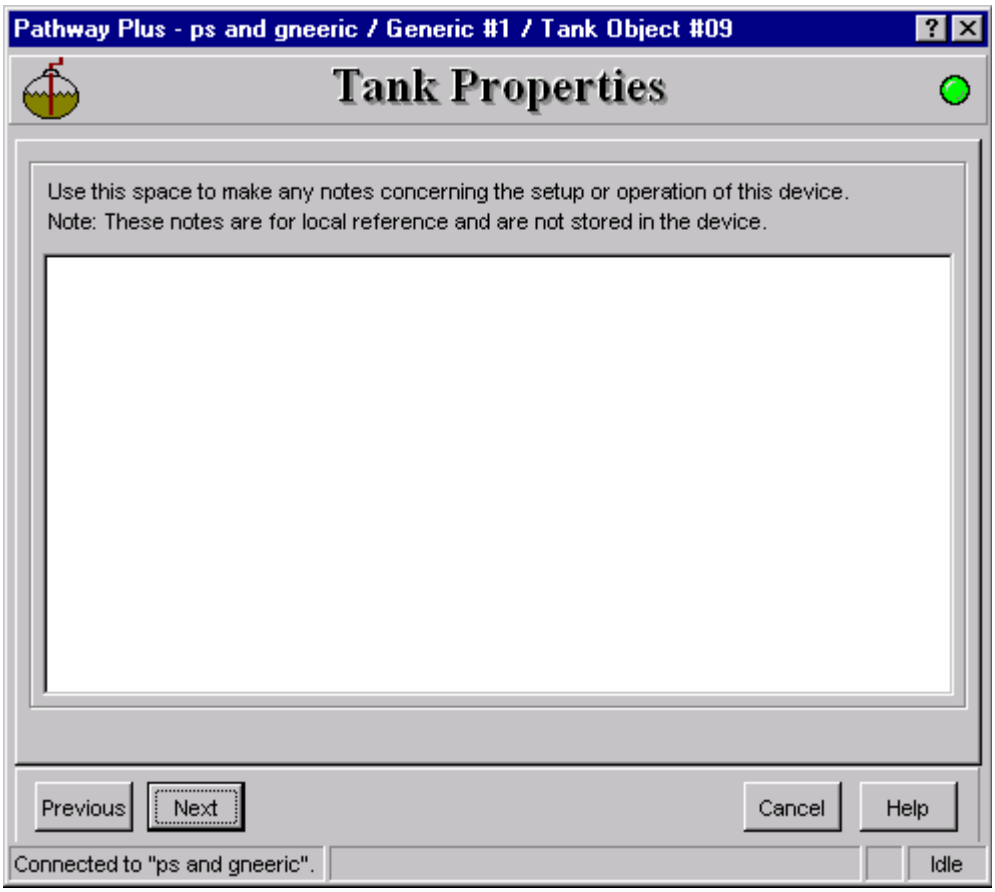
Enabled State box must be 'checked' to enable operation of the tank.



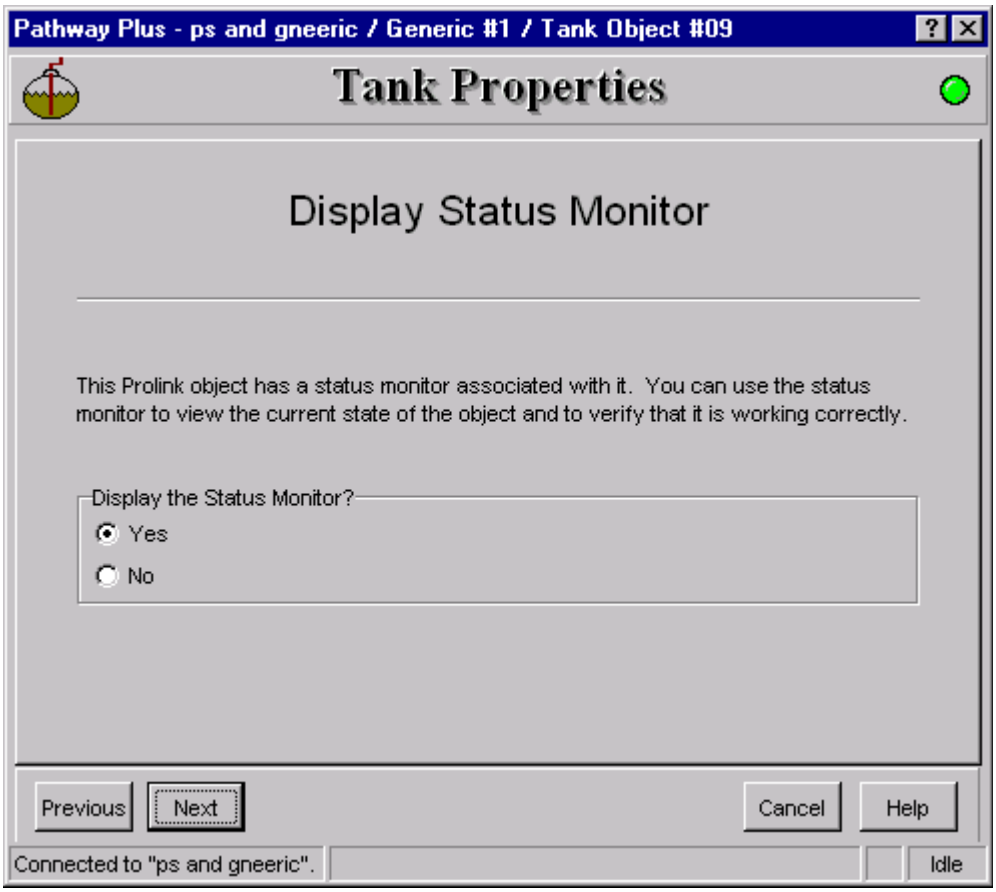
The tank diameter, capacity and length are read only. Changing these items must be done using the tank gauge setup procedure. Please consult the tank gauge manual for more information.



The fuel type is also a read only item. To change the fuel type you must use the setup of the tank gauge. Please refer to the tank gauge manual for more information.



This is the user's opportunity to make any notes for future reference.



Selecting yes will display the status monitor for the tank object. If everything is setup properly you will see tank levels, temperature, etc. If these don't look right you will need to review the setup.

Appendix A: Replacement Parts

Part Number	Description
RJ400-679-5	KIT, PCC-10 Network adapter
RJ400-680-5	22-gauge, 2-conductor Twisted Pair Cable with PVC Jacket (network cable)
RJ350-158-5	Cable, DB9 to DB25-Null Modem
RJ350-157-5	PCC-10 Network cable
RJ350-161-5	Cable, PCC-10 Network to Fly-wire Adapter

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