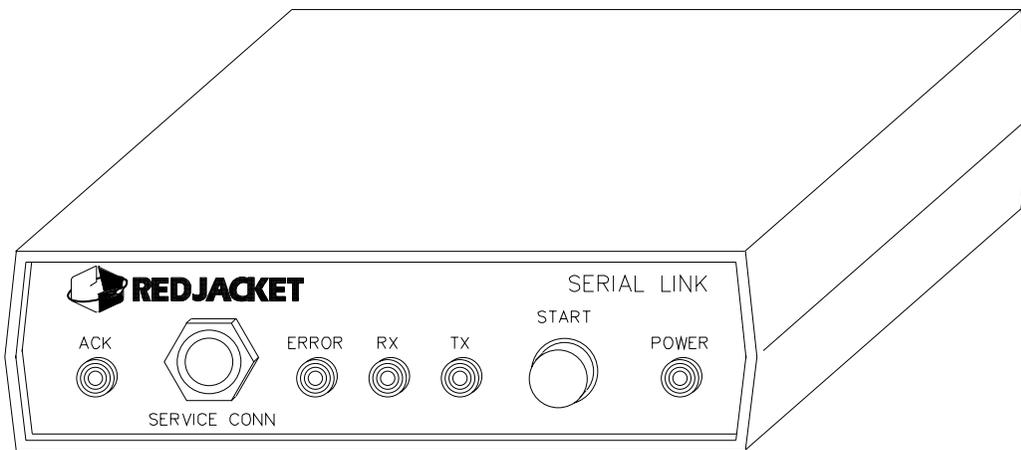


ProLink

Serial Link BASiCom Mode Installation Manual



ProLink Fuel Management System

RE260-339
Rev B
June 99

Serial Link BASICom Mode Installation Manual

RE260-339 • Rev B • June 99

Certifications and Listings

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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 two chapters:

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).
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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: Serial Link Overview and Installation

This Chapter Explains

- Overview
- System Description
- Installing the Serial Link

Overview of the Serial Link, BASICom Mode

The Serial Link, BASICom Mode provides selected ProLink system data to external equipment. BASICom emulates a subset of the Veeder/Root de facto serial communication standard for tank monitoring systems. This allows most POS and similar systems to collect certain ProLink system data such as inventory, alarm status, deliveries, and tank test results across an RS232 serial connection. BASICom applications support a wide range of baud rates and data frames (data bits, parity, and stop bits) at its DB9 male connection.

Notice:	BASICom supports a special command not found in the Veeder/Root standard. The command is <SOH>RJ<enter>. The response contains all of the commands which that particular version of BASICom supports.
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To view the report:

- 1) Connect a computer serial port to the Serial Link BASICom RS232 serial port with a null modem cable.
- 2) Run a terminal emulator program such as ProComm or Hyperterminal.

3) The terminal emulator software may need port configuration:

- Direct connection to the serial port at BASICom's currently programmed baud, parity, data bits, and stop bits.
- BASICom defaults to 9600 baud, ODD parity, 7 data bits, and 1 stop bit.

4) Press the 'Caps Lock' key.

5) Press and hold the 'Control' or 'Ctrl' key, then press the 'A' key. Release all keys.

6) Press the 'R', 'J', then 'Enter' keys in sequence.

The report should now be visible on the computer screen.

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 (6VDCoutput). For international applications, a 220VAC 50Hz model is available.

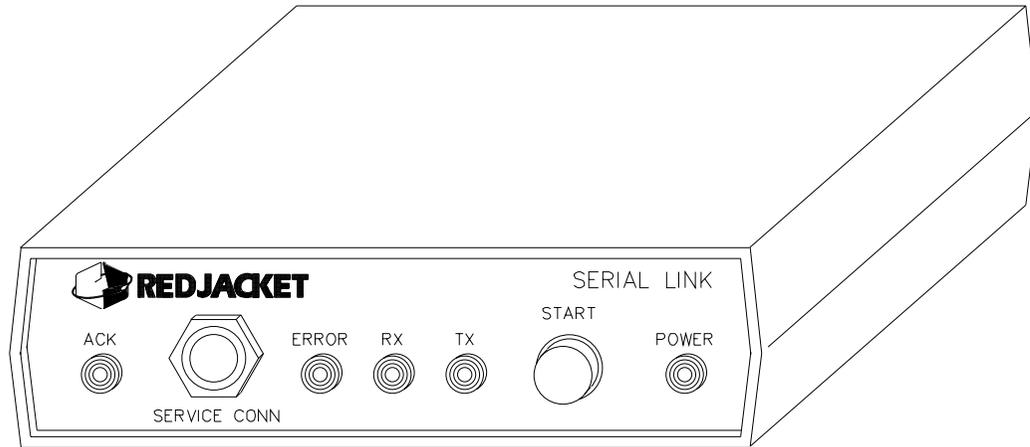


Figure 1.1 Serial Link, Front View

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.

Start Button: Performs serial port data test. (Loop Back connector required, see Appdx A)

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

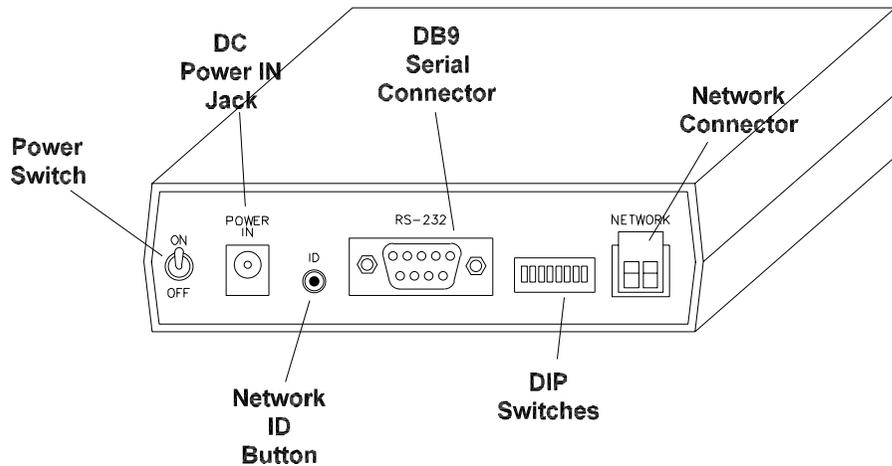


Figure 1.2 Serial Link, Rear View

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.

Installing the Serial Link

Mount the Serial Link enclosure within 9-ft (depending on cable length) of the POS 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.

DIP Switch Settings

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

Position	Switch Position	Description
1	Down	Battery backup is enabled
	Up	Battery backup is disabled
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 2, 3, and 4 are not used for the BASICom Mode application; they may be used in future applications.
---------------	--

Notice	DIP switch number 1 should be configured in the DOWN position. This enables the battery backup. If this is not enabled, AC power loss will result in the loss of all stored reports.
---------------	--

Chapter 2: Connecting the BASICom Serial Link

This Chapter Explains

- Network Connections
- Connecting to a ProLink Network
- RS232 Connections

Network Connections

The two terminal network connector (located on the back of the Serial Link enclosure) provides a method for connecting the Serial Link to other devices in the ProLink network. The Serial Link can also function as a network termination for the ProLink network.

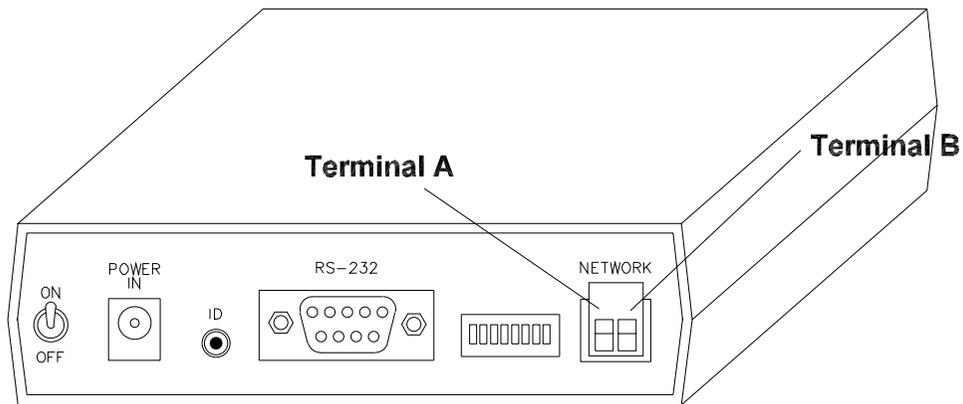


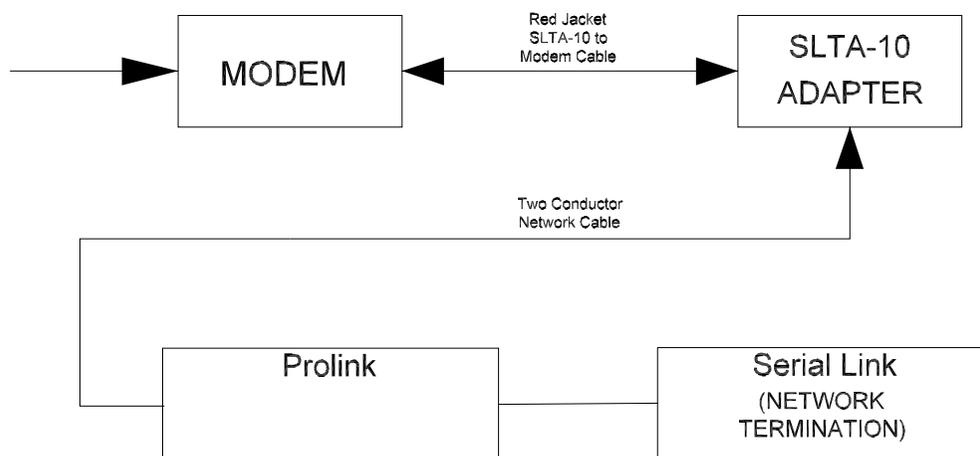
Figure 2.1 Serial Link Network Terminal Connector

The following sections show possible ProLink network connections for the Serial Link.

Connecting Serial Link to the Prolink

The following diagram shows the network connections to the Prolink network.

Basic Prolink Network with Serial Link



This is the simplest type of Prolink network. It consists of a modem, an SLTA-10 network adapter, and a Prolink chassis as the network terminator.

Figure 2.2 Prolink to Serial Link network connections

The following procedure should be followed when connecting the Serial Link to the Prolink chassis.

- 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. See figure 2.3.

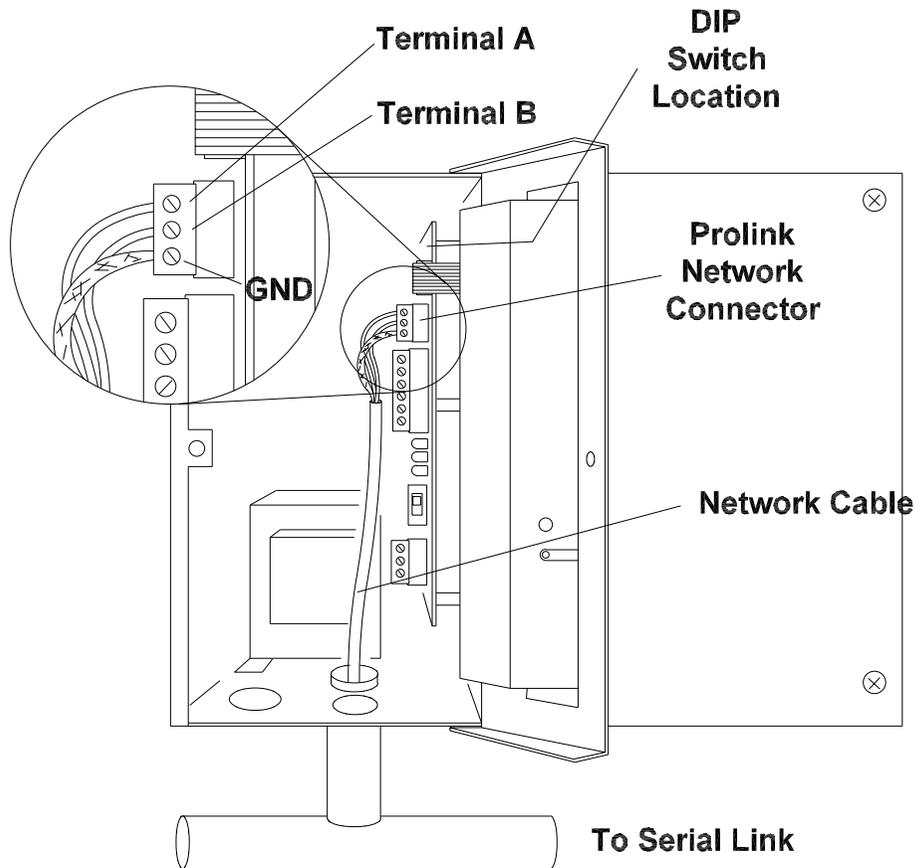


Figure 2.3 Network cable connections to Prolink

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. See figure 2.4.

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

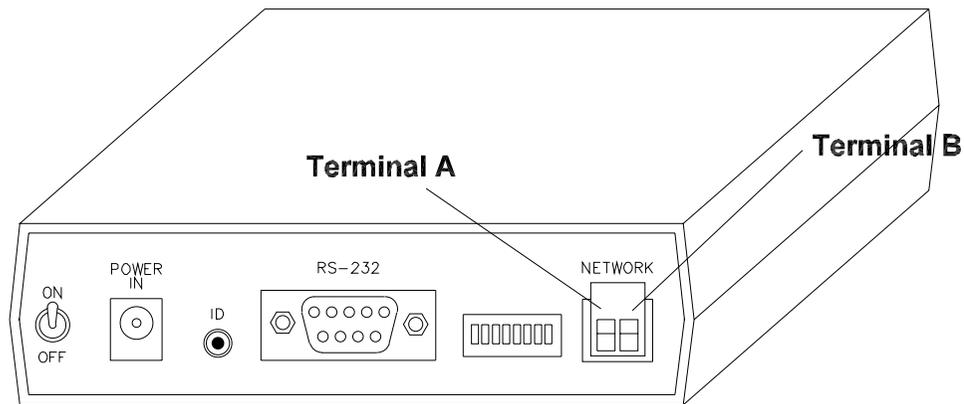


Figure 2.4 Serial Link network connectors

Notice

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

RS232 Connections

External RS232 equipment used to collect data from the ProLink system via the Serial Link BASICom, such as POS or station back office PCs are referred to “polling devices” in this manual.

The polling device will be 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

BASCOM currently uses pins 2, 3, 4, and 5. No 'loop-back' connections are necessary for BASCOM to operate. Therefore only three pins (2,3,5) need to be connected (three wire interface) to the polling device. Additional pins may be connected but are ignored by BASCOM.

In most cases standard off the shelf 'null modem' cabling can be used to connect the Serial Link to the polling device. Many polling 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:

BASCOM Serial Link		Polling Device
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 polling 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 polling device.

Connecting BASCOM Serial Link to Polling 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 polling 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 BASCOM Serial Link. The unit will not respond to a polling device until configured by Pathway Plus. Refer to the Pathway Plus online help for more information on configuring the BASCOM.
---------------	--

Typical system connections – Serial Link direct to polling device

In this example, the polling device serial port is dedicated to the Serial Link.



Figure 2.5 Prolink network to BASCOM to polling device

Typical system connections – Serial Link, Chameleon, Modem, and Polling Device

In this example, the polling device has access to the BASICom Serial Link most of the time, but dial in access to BASICom is supported. This is useful in cases where quick remote access to current information using a terminal emulator (such as Hyperterminal) is desired.

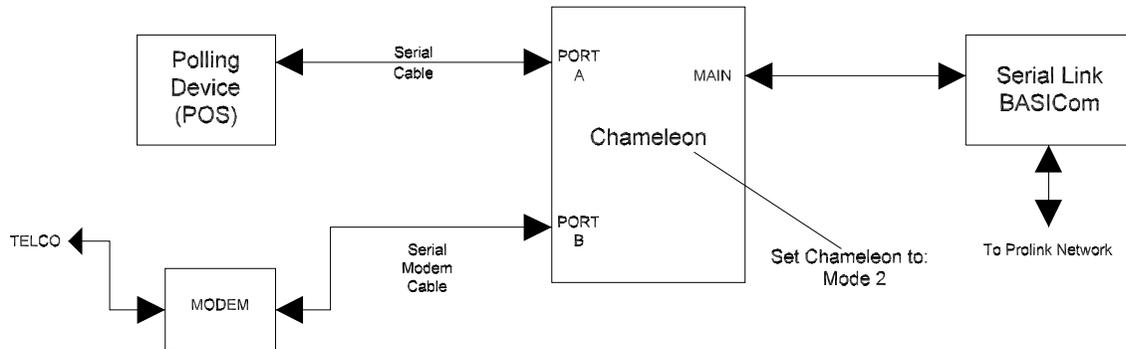


Figure 2.6 Connecting Serial Link, Chameleon, Modem, and Polling Device

Connecting to a Modem

The Serial Link connects to an external Hayes compatible modem. Refer to the parts list at the end of this manual for modem kits that have been tested with the Serial Link to ensure compatibility.

Notice	DON'T connect the Serial Link unit directly to a telephone line. A modem MUST ALWAYS be used as the interface between Serial Link and a telephone system.
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Follow these procedures to connect the Serial Link to a modem linked to the telephone system.

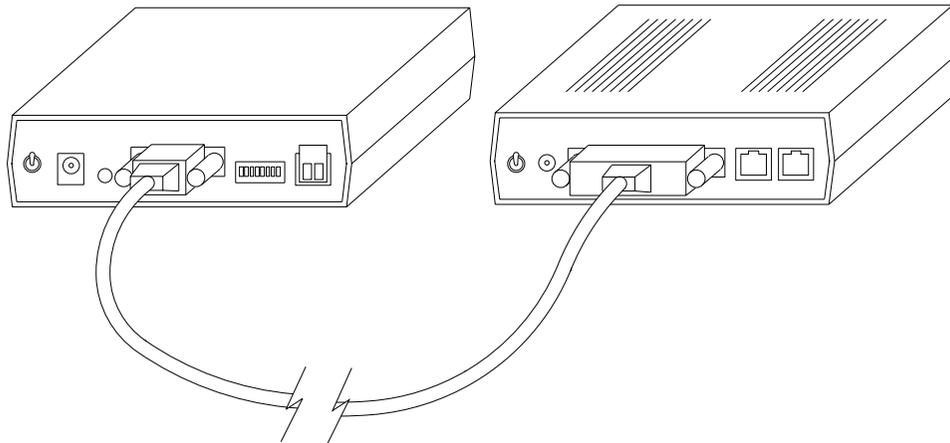


Figure 2.7 Serial Link to Modem Connection

Step 1: Disconnect power from both the Serial Link and the modem.

Step 2: Connect the DB9 end of the modem cable to the Serial Link and the DB25 end to the modem.

Step 3: Reconnect power to both the Serial Link and the modem.

Connecting to a Laptop Computer

The Serial Link can be connected to a laptop computer using the PCC-10 PCMCIA card adapter and cable assembly. Refer to figure 2.8.

Step 1: Turn the laptop computer and the Serial Link OFF.

Step 2: Insert the PCC-10 PCMCIA card into an open PCMCIA type II slot on the computer.

Step 3: Connect the PCC-10 connector on the cable to the Service Conn jack on the face of the Serial Link .

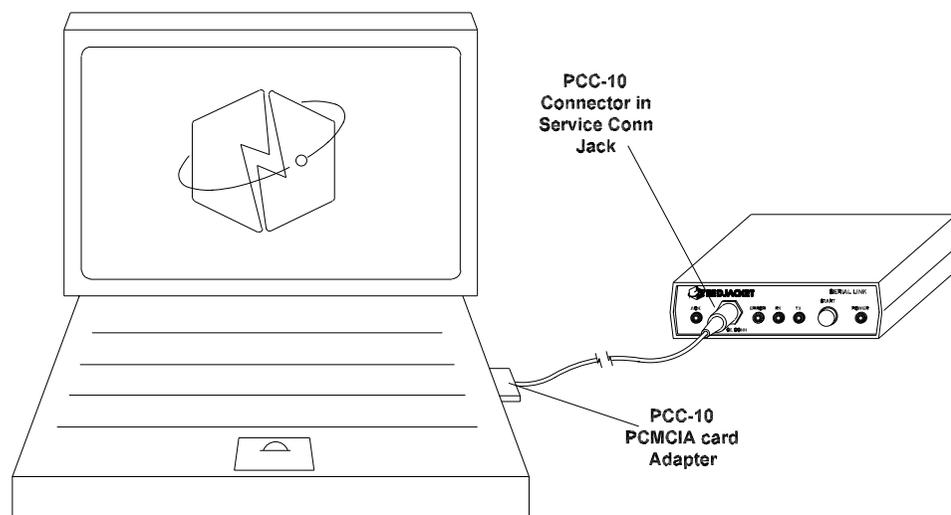


Figure 2.8 PCC-10 connection from a laptop computer to the Serial Link

Step 4: Turn the Serial Link back ON.

Step 5: Start the computer and run Pathway Plus to retrieve line leak information from the Serial Link.

Appendix A: Replacement Parts

Part Number	Description
RE400-749-5	Serial Link, BASICom, 120 VAC
RE400-750-5	Serial Link, BASICom, 220 VAC
RE400-679-5	KIT, PCC-10 Network adapter
RE125-153	PCLTA-10 Network Adapter
RE400-680	22-gauge, 2-conductor Twisted Pair Cable with PVC Jacket (network cable)
RE350-158-5	Cable, DB9 to DB25-Null Modem
RE400-634	Modem kit, high speed
RE400-636	Modem kit, high speed, with call router
RE400-633	Modem kit, low speed
RE400-635	Modem kit, low speed, with call router
RE350-157	PCC-10 Network cable
RE350-161	Cable, PCC-10 Network to Fly-wire Adapter

Appendix B: Loop-Back Connector

The Loop-Back connector is a standard DB9 female connector with pin 2 connected to pin 3. (RXD to TXD) Parts to make the connector are readily available from electronic supply houses. Refer to figure B-1.

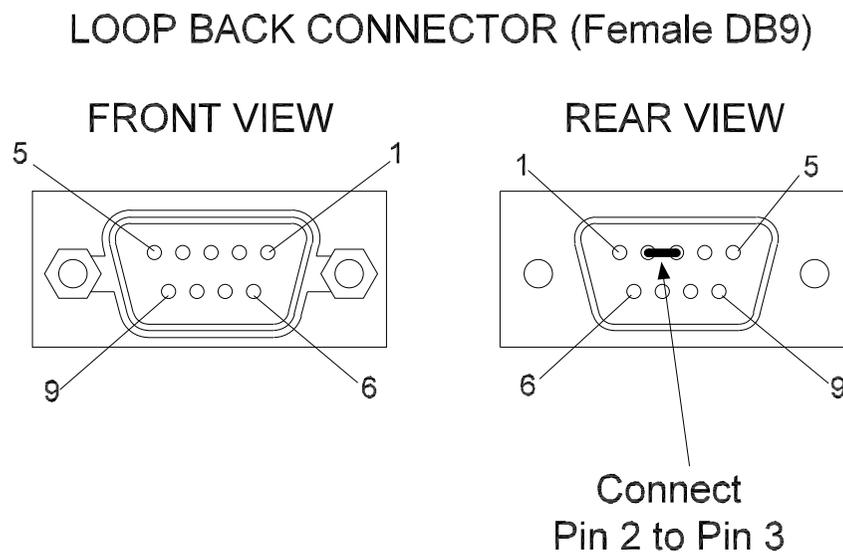


Figure B-1 Loop-Back Connector Details

The Loop-Back connector is used when performing the BASICom self test.

Notice: The BASICom Serial Link must be configured by Pathway Plus before attempting the self test procedure.

Self Test Procedure

- 1) Power down the Serial Link.
- 2) Remove any cables from the RS232 serial port and install the Loop-Back connector.
- 3) Turn the Serial Link back on.
- 4) Press the START button on the Serial Link.

The TX and RX lamps should flash briefly. (brightness is affected by the current baud rate setting)

- 5) If the test passes, the ERROR lamp will be OFF.

If the test fails, the ERROR lamp will be ON.

Failing the self test may indicate that the Serial Link hardware has failed. Recycle power to the Serial Link and retest. If it continues to fail, contact Red Jacket Technical Support.

This self test may also be initiated through Pathway Plus. The Pass or Fail result will be shown onscreen.

Appendix C: Glossary

AC	Alternating current
Adapter	A device used to make different parts of an apparatus compatible.
Ampere (A)	A unit of electric current equivalent to a steady current produced by 1 V applied across a resistance of 1 Ω .
CPT	Constant Pressure Turbine. The CPT pump uses controlled pressure technology and includes the constant pressure turbine and compliance pressure testing. The CPT System has three components: controller, final pump and motor, and a transducer kit.
DC	Direct current.
DIP switch	Dual in-line package switch with two rows of pins through which signals and power enter and leave the package.
EMI	Electromagnetic interference; interference relating to the magnetism developed by a current of electricity.
EPA	U.S. Environmental Protection Agency. The EPA line leak test protocols include hourly, monthly, and annual testing.
Ground	A conductor that connects with the earth; to connect electrically with ground (earth ground, chassis ground, analog ground, digital ground).
HDPE	High-density polyethylene.
Intrinsically safe barrier	A barrier to keep intrinsically safe wiring physically separated from all other wiring.
LED	Light-emitting diode.
Ohm (Ω)	A unit of electrical resistance equal to the resistance of a circuit in which a potential difference of 1 V produces a current of 1 ampere.
Peripheral	A device connected to the system that provides communication or auxiliary functions.
TIM	Transaction interface module.
UL-classified	A designation for products that have been evaluated by Underwriters Laboratories with respect to one or more of the following: (1) specific hazards only — for example, flammability; (2) performance under specified conditions; (3) regulatory codes; or (4) other standards.
UL-listed	A designation for products that have been evaluated by Underwriters Laboratories with respect to reasonably foreseeable hazards to life and property, and in which the risks of such hazards have been reduced to an acceptable degree.

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