



Where Automation Connects.



ProLinX[®]

5604-RIO-PDPMV1

ProLinX Standalone

Rockwell Automation[®] Remote I/O to
PROFIBUS DP-V1 Master Gateway

11/20/2008

SETUP GUIDE

Please Read This Notice

Successful application of this module requires a reasonable working knowledge of the ProLinx Module, its connected devices, and the application in which the combination is to be used. For this reason, it is important that those responsible for implementation satisfy themselves that the combination will meet the needs of the application without exposing personnel or equipment to unsafe or inappropriate working conditions.

This manual is provided to assist the user. Every attempt has been made to assure that the information provided is accurate and a true reflection of the product's installation requirements. In order to assure a complete understanding of the operation of the product, the user should read all applicable documentation on the operation of the connected devices.

Under no conditions will ProSoft Technology be responsible or liable for indirect or consequential damages resulting from the use or application of the product.

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Information in this manual is subject to change without notice and does not represent a commitment on the part of ProSoft Technology. Improvements and/or changes in this manual or the product may be made at any time. These changes will be made periodically to correct technical inaccuracies or typographical errors.

Important Installation Instructions

Power, Input and Output (I/O) wiring must be in accordance with Class I, Division 2 wiring methods, Article 501-4 (b) of the National Electrical Code, NFPA 70 for installation in the U.S., or as specified in Section 18-1J2 of the Canadian Electrical Code for installations in Canada, and in accordance with the authority having jurisdiction. The following warnings must be heeded:

- A** WARNING - EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIV. 2;
- B** WARNING - EXPLOSION HAZARD - WHEN IN HAZARDOUS LOCATIONS, TURN OFF POWER BEFORE REPLACING OR WIRING MODULES, and
- C** WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NONHAZARDOUS.
- D** "THIS DEVICE SHALL BE POWERED BY CLASS 2 OUTPUTS ONLY.

All ProLinx® Products

WARNING – EXPLOSION HAZARD – DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.

AVERTISSEMENT – RISQUE D'EXPLOSION – AVANT DE DÉCONNECTER L'EQUIPMENT, COUPER LE COURANT OU S'ASSURER QUE L'EMPLACEMENT EST DÉSIGNÉ NON DANGEREUX.



CL I Div 2 GP A, B, C, D

Temp Code T5

II 3 G

Ex nA nL IIC T4 X

0° C <= Ta <= 60° C

II – Equipment intended for above ground use (not for use in mines).

3 – Category 3 equipment, investigated for normal operation only.

G – Equipment protected against explosive gasses.

ProLinx Modules with Ethernet Ports

Series C ProLinx™ modules with Ethernet ports do **NOT** include the HTML Web Server. The HTML Web Server must be ordered as an option. This option requires a factory-installed hardware addition. The HTML Web Server now supports:

- 8 MB file storage for HTML files and associated graphics files (previously limited to 384K)
- 32K maximum HTML page size (previously limited to 16K)

To upgrade a previously purchased Series C model:

Contact your ProSoft Technology distributor to order the upgrade and obtain a Returned Merchandise Authorization (RMA) to return the unit to ProSoft Technology.

To Order a Series C mode with the -WEB option:

Add **-WEB** to the standard ProLinx part number. For example, **5201-MNET-MCM-WEB**.

ProLinx Plus with Radio

The following Information and warnings pertaining to the radio module must be heeded:

- A** "THIS DEVICE CONTAINS A TRANSMITTER MODULE, FCC ID: SDZ-WA-1. PLEASE SEE FCC ID LABEL ON BACK OF DEVICE."
- B** "THIS DEVICE USES AN INTERNAL COMPACT FLASH RADIO MODULE AS THE PRIMARY RADIO COMPONENT. THE COMPACT FLASH RADIO MODULE DOES NOT HAVE AN FCC ID LABEL. THE COMPACT FLASH RADIO MODULE HAS NO USER SERVICABLE PARTS."
- C** "THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION."
- D** "THIS DEVICE AND ANY RADIO ACCESSORY SOLD BY PROSOFT MUST BE INSTALLED BY AN AUTHORIZED PROFESSIONAL INDUSTRIAL RADIO SYSTEM INTEGRATOR. FURTHER, ONLY RADIO ACCESSORIES SOLD BY PROSOFT AND SPECIFICALLY TESTED FOR USE WITH THIS DEVICE MAY BE USED WITH THIS DEVICE."
- E** "THE USER OF THIS EQUIPMENT CANNOT BE WITHIN 20 cm. FROM THE RADIATING ELEMENT DEVICE."
- F** "CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT."

Industry Canada Requirements:

- A** "THIS DEVICE HAS BEEN DESIGNED TO OPERATE WITH AN ANTENNA HAVING A MAXIMUM GAIN OF 24 dB. AN ANTENNA HAVING A HIGHER GAIN IS STRICTLY PROHIBITED PER REGULATIONS OF INDUSTRY CANADA. THE REQUIRED ANTENNA IMPEDANCE IS 50 OHMS."
- B** "TO REDUCE POTENTIAL RADIO INTERFERENCE TO OTHER USERS, THE ANTENNA TYPE AND ITS GAIN SHOULD BE CHOSEN SUCH THAT THE EQUIVALENT ISOTROPICALLY RADIATED POWER (EIRP) IS NOT MORE THAN THAT REQUIRED FOR SUCCESSFUL COMMUNICATION."
- C** "THE INSTALLER OF THIS RADIO EQUIPMENT MUST INSURE THAT THE ANTENNA IS LOCATED OR POINTED SUCH THAT IT DOES NOT EMIT RF FIELD IN EXCESS OF HEALTH CANADA LIMITS FOR THE GENERAL POPULATION; CONSULT SAFETY CODE 6, OBTAINABLE FROM HEALTH CANADA."

WARNING:

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Your Feedback Please

We always want you to feel that you made the right decision to use our products. If you have suggestions, comments, compliments or complaints about the product, documentation or support, please write or call us.

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5604-RIO-PDPMV1 Setup Guide
11/20/2008

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1 Introduction

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- ❖ Using the Sample ProSoft Configuration Builder Files 8

This manual is intended to guide you through the setup and configuration of your ProLinx 5604-RIO-PDPMV1 device.

Important: This Setup Guide shows you how to set up a simple RIO to PDPMV1 network between a PLC5 processor and a ProLinx 5604-RIO-PDPMV1 module. This guide should be used as a starting point only.

In all likelihood, the requirements of your particular application will involve additional configuration and development. For detailed information on the Rockwell Automation® Remote I/O and PROFIBUS DP-V1 Master protocols, please refer to the following Driver Manuals, on your ProSoft Solutions CD-ROM:

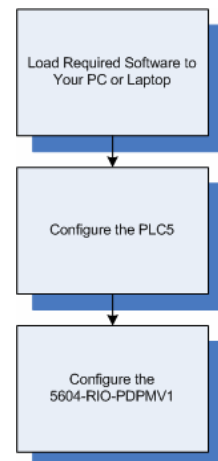
- RIO Driver Manual
- PDPMV1 Driver Manual

For general information on installing and configuring ProLinx modules, please refer to the ProLinx Reference Guide, also on your ProSoft Solutions CD-ROM.

1.1 Before You Begin

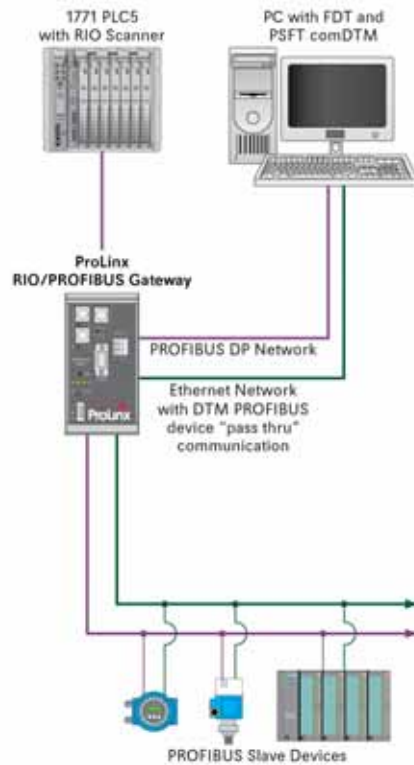
Setting up the RIO to PDPMV1 network is relatively simple using the sample files included on the ProLinx Solutions CD. The flow diagram illustrates the high-level steps used to configure each module.

You can use the sample files to get started or you can create the configuration files from scratch. The easiest way to begin is to use the sample configurations. Once you understand how they are created, setting up your network is easy.



1.2 Using the Sample ProSoft Configuration Builder Files

The sample application uses a 5604-RIO-PDPMV1 module to establish communications between a PLC5 and the PROFIBUS DP network. The following diagram illustrates this application.



You can use this guide in two ways. First, you can use it as a learning tool to see how the PCB files make the sample application work. You can also follow along with the example and modify the configuration files as you go along.

Whether you are configuring your modules on the fly or just reading through to understand how to use the sample application, there are steps that you must perform even if you are not yet configuring any modules to suit your own application.

2 Copy the Installation Tools from the CD-ROM

In This Chapter

- ❖ Install ProSoft Configuration Builder (PCB) 9
- ❖ Copy the Sample Application Files 10


There is one setup guide, one application (ProSoft Configuration Builder), one sample configuration file (PPF) and one sample ladder logic file (RSP) that you must download from the ProLinx Solutions CD to your PC whether you are using the sample configuration or you are modifying the configuration to suit the needs of your application. This section describes how to get everything you need loaded to your PC. **You must perform these steps regardless of whether you are configuring your modules now or just reading about the sample applications.**

2.1 Install ProSoft Configuration Builder (PCB)


ProSoft Configuration Builder helps you configure the module for your application.

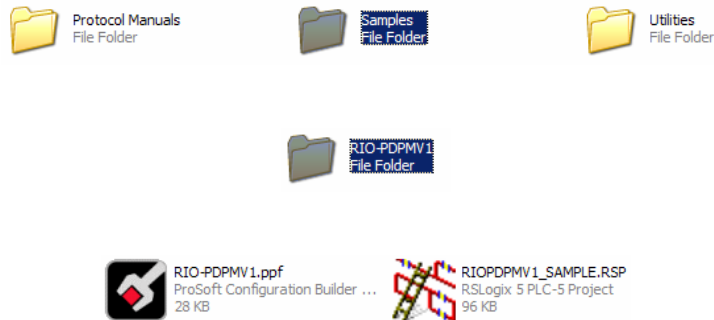
- 1 Insert the ProLinx Solutions CD into the CD-ROM drive on your PC. The ProLinx Solutions splash page appears:



- 2 Select  Install Configuration Tool.
- 3 Follow the prompts to install ProSoft Configuration Builder to your hard disk.

2.2 Copy the Sample Application Files

- 1 From the ProLinx Solutions splash screen, click  **Product Documentation**.
- 2 Choose **Samples / RIO-PDPMV1**.



- 3 Copy the **RIO-PDPMV1.ppf** and **RIOPDPMV1_SAMPLE.RSP** files to a location on your PC.

3 About the Sample PLC5 Program

In This Chapter

- ❖ How the Sample Program Works 11
- ❖ Connect your PC to the Processor 12
- ❖ Download the Sample Program to the Processor..... 13

In order to communicate with the RIO interface on a ProLinx module, the Remote I/O Scanner (usually a PLC) must be set up and programmed to scan the interface. The sample ladder logic in this Setup Guide is for the PLC5 processor.

For this example, you will download the sample program (page 13) to the PLC5 processor, and then continue configuring the 5604-RIO-PDPMV1 module. When the module is connected between the PLC5 processor and the PROFIBUS network, you will be able to see data exchange taking place.

3.1 How the Sample Program Works

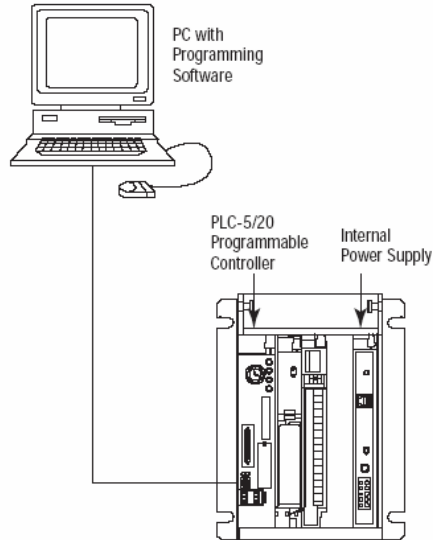
The sample program sends and receives 768 words of cyclic PROFIBUS data between the PLC5 and the PROFIBUS slaves. The BTR and BTW rungs in the LAD2 - BT-XFER routine transfer the entire input and output image during each scan cycle.

You can use the sample program as-is, or you can incorporate it into an existing program by copying the routine LAD 2 - BT-XFER and data files from the sample program and pasting it into your existing program.

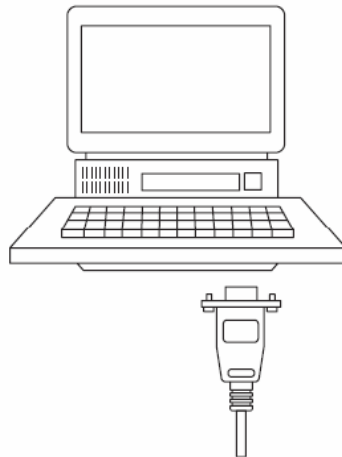
Important: Take care not to overwrite existing data files in your application with data files in the sample application. Rename either the source or the destination data files, and then search and replace references in the ladder for instances of any renamed files.

3.2 Connect your PC to the Processor

- 1 Connect the right-angle connector end of the cable to your controller at the communications port.



- 2 Connect the straight connector end of the cable to the serial port on your computer.

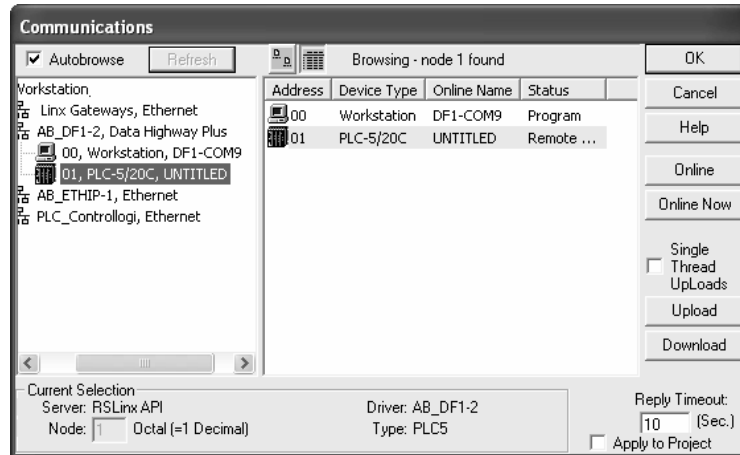


3.3 Download the Sample Program to the Processor

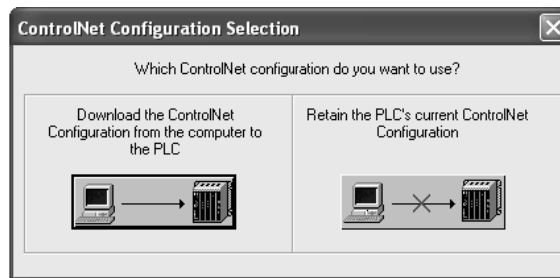
To download the sample program from RSLogix 5 to the PLC processor:

Note: The key switch on the front of the PLC processor must be in the REM position.

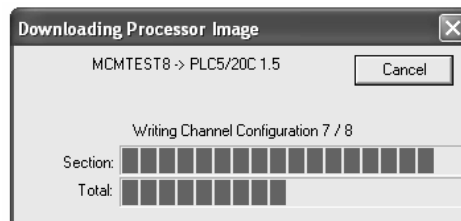
- 1 If you are not already online to the processor, open the Communications menu, and then choose Download. RSLogix will establish communication with the processor.



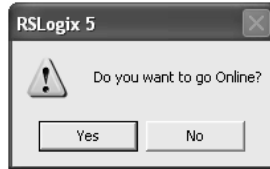
- 2 Click the Download button to transfer the sample program to the processor.
- 3 When prompted, choose Computer to PLC



- 4 RSLogix will compile the program and transfer it to the processor. This process may take a few minutes.



- When the download is complete, RSLogix will open another confirmation dialog box. Click OK to switch the processor from Program mode to Run mode.

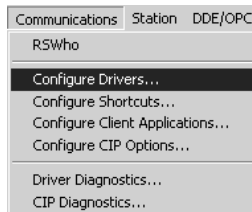


Note: If you receive an error message during these steps, refer to your RSLogix documentation to interpret and correct the error.

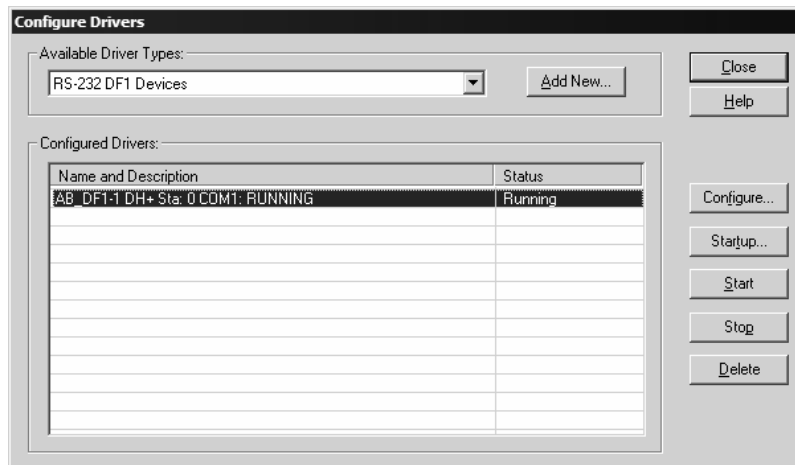
3.3.1 Configuring RSLinx

If RSLogix is unable to establish communication with the processor, follow these steps:

- Open RSLinx.
- Open the Communications menu, and choose Configure Drivers.



This action opens the Configure Drivers dialog box.



Note: If the list of configured drivers is blank, you must first choose and configure a driver from the Available Driver Types list. The recommended driver type to choose for serial communication with the processor is "RS-232 DF1 Devices".

- 3 Click to select the driver, and then click Configure. This action opens the Configure Allen-Bradley DF1 Communications Device dialog box.



- 4 Click the Auto-Configure button. RSLinx will attempt to configure your serial port to work with the selected driver.
- 5 When you see the message "Auto Configuration Successful", click the OK button to dismiss the dialog box.

Note: If the auto-configuration procedure fails, verify that the cables are connected correctly between the processor and the serial port on your computer, and then try again. If you are still unable to auto-configure the port, refer to your RSLinx documentation for further troubleshooting steps.

4 Configure the PROFIBUS Master

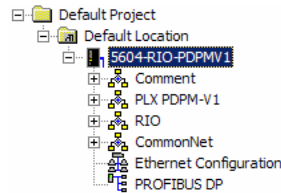
In This Chapter

- ❖ Complete the ProSoft Configuration Builder Sections 18

Based on the sample application, a remote PROFIBUS DP Slave is connected to a 5604-RIO-PDPMV1, which communicates data to the PLC5 processor via Remote I/O. The goal here is to begin to establish communications between the PROFIBUS DP Slaves and the PLC5 processor. The default configuration is designed to pass 768 words between the PROFIBUS DP network and the PLC5 processor.

Configuration is accomplished using ProSoft Configuration Builder (PCB). The sample configuration file is **5604-RIO-PDPMV1.PPF**.


- 1 Start PCB.
- 2 Select **File / Open**.
- 3 Navigate to the location where you copied the **5604-RIO-PDPMV1.PPF** file and select this file.
- 4 Expand the **5604-RIO-PDPMV1** module selection.

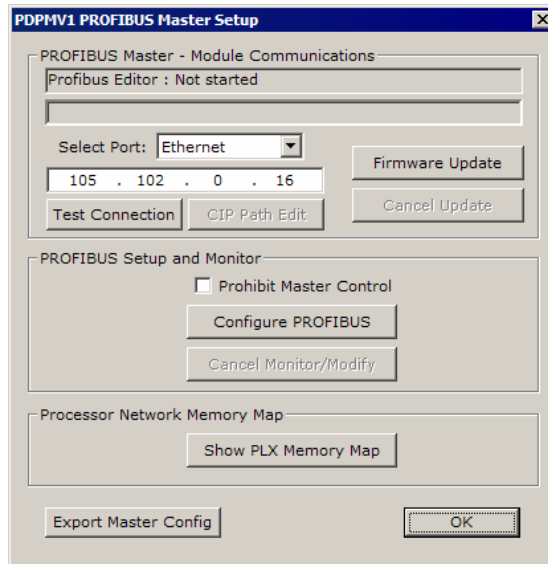


4.1 Complete the ProSoft Configuration Builder Sections

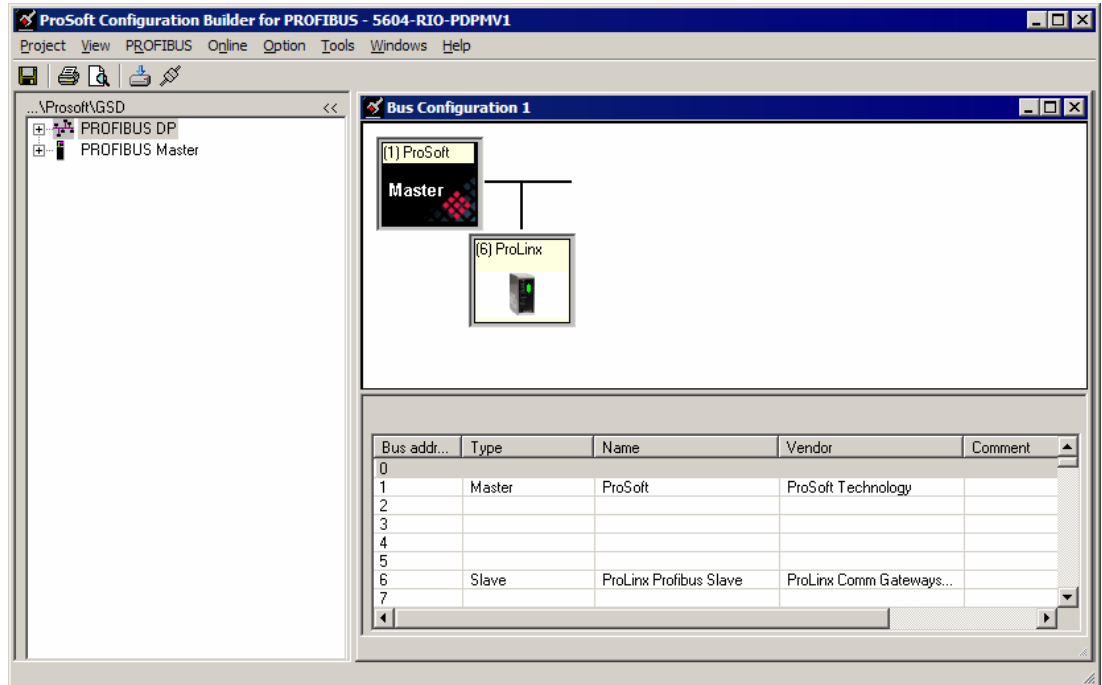
4.1.1 PROFIBUS Network

The sample PROFIBUS network consists of the ProLinx PROFIBUS DP V1 Master and a single ProLinx PROFIBUS DP Slave (PDPS) device.

- 1 To view the sample PROFIBUS network configuration, double-click the  PROFIBUS DP icon. This action opens the PDPMV1 PROFIBUS Master Setup dialog box.




- 2 On the PDPMV1 PROFIBUS Master Setup dialog box, click the Configure PROFIBUS button. This action opens the ProSoft Configuration Builder for PROFIBUS window.

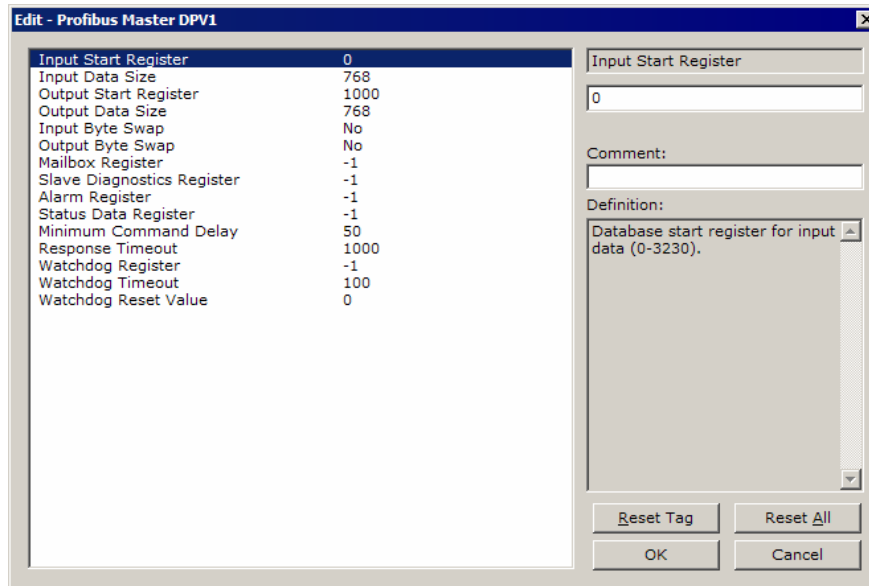


- 3 Notice that the PROFIBUS Master and Slave devices are already configured. After you have completed the steps in this Setup Guide, you will need to modify the PROFIBUS network configuration to meet the needs of your own application. Refer to the PDPMV1 Driver Manual for more information on adding and configuring PROFIBUS slave devices.
- 4 When you have finished examining the sample PROFIBUS network configuration, close the ProSoft Configuration Builder for PROFIBUS window.
- 5 Click OK to close the PDPMV1 PROFIBUS Master Setup dialog box and return to ProSoft Configuration Builder.

4.1.2 Profibus Master DPV1

The next step is to configure the PLX PDPM-V1 section.


- 1 Double-click the  icon. This action opens the Edit dialog box.

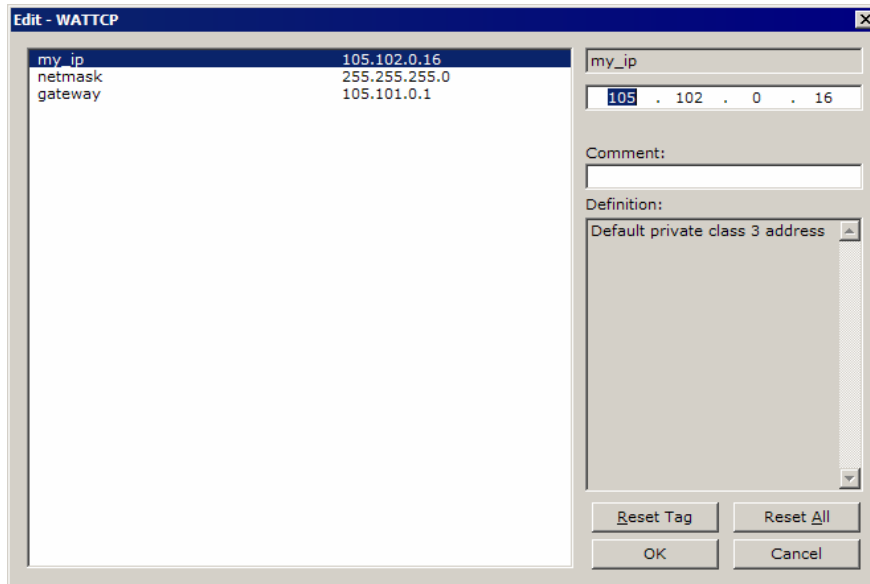


- 2 Notice that the Input and Output data size parameters are configured for 768 words of PROFIBUS data, each in their own area of memory in the module database. Cyclic data commutation of slave I/O data is handled automatically by the master. You do not need to do anything other than specify the start register and data size for slave I/O data. This has been done for you in the sample configuration and the sample ladder logic. The Mailbox, Slave, Alarm, Status and Watchdog registers are all disabled as they are not used in the sample configuration.
- 3 Refer to the PDPMV1 Driver Manual, located on the ProLinx Solutions CD, for information on how to configure these settings for your own application. After making changes, be sure to save your changes before moving on to the next step.

4.1.3 Ethernet Configuration

The Ethernet Configuration section is optional, and is required only if you will be using ProSoft Technology's PROFIBUS comDTM. PROFIBUS comDTM allows configuration tools, instruments and communication devices on a field network to recognize and use the module's capabilities. Refer to the PDPMV1 Driver Manual for more information on PROFIBUS comDTM.

- 1 Double click on the  Ethernet Configuration icon. This action opens the Edit - WATTCP dialog box.

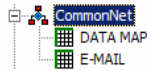



Every ProLinx PDPMV1 module is set up with the default Ethernet configuration shown in this example. You may have to modify these values to suit the needs of your network.

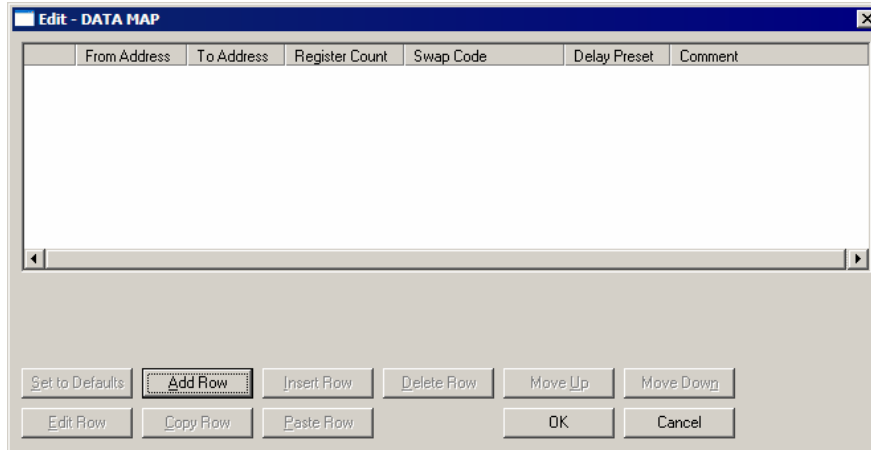
Note: All modules must have the same Subnet Mask and Default Gateway if they are all located on the same network. Only the fourth octet in the my_ip address must be different for each module.

4.1.4 CommonNet

Expand the CommonNet section.



Double-click on the  icon.



This section does not require any editing for the sample application. Refer to the ProLinx Reference Guide, located on the ProLinx Solutions CD, for information on setting up data mapping for your application.

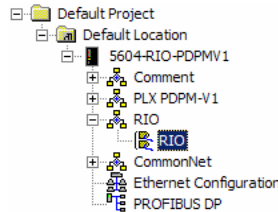
5 Configure the Remote I/O Adapter

In This Chapter

- ❖ Complete the ProSoft Configuration Builder Sections 23
- ❖ Save and Download the Configuration File to the 5604-RIO-PDPMV1 . 24


Configuring the Remote I/O Adapter is done the same way as the PROFIBUS DP V1 Master, with a few exceptions outlined in this section.

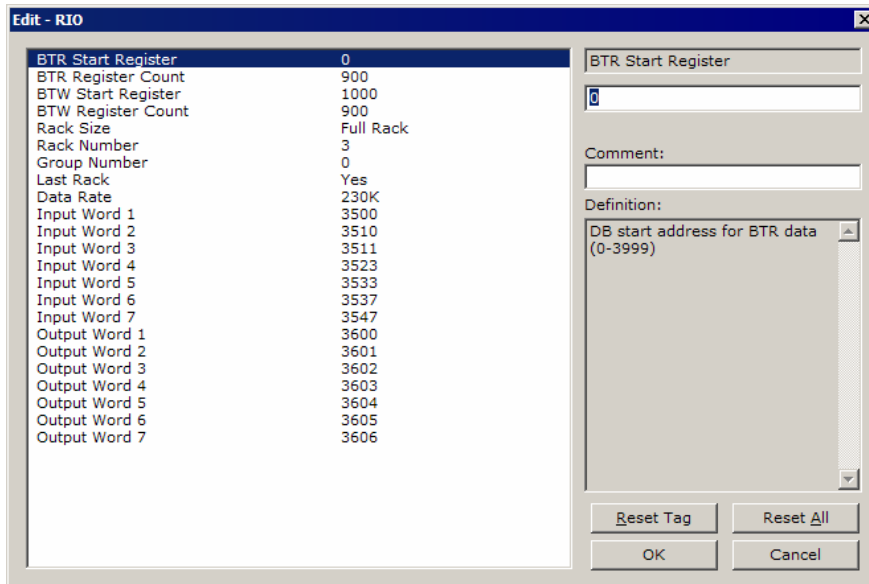
- 1 With PCB open, expand the RIO module selection.



5.1 Complete the ProSoft Configuration Builder Sections

5.1.1 RIO Configuration

- 1 Double click on the  RIO selection. This action opens the Edit dialog box.



This section of the configuration associates the internal database registers with the PLC input and output images. Refer to the RIO driver manual for information on each of these parameters.

5.2 Save and Download the Configuration File to the 5604-RIO-PDPMV1

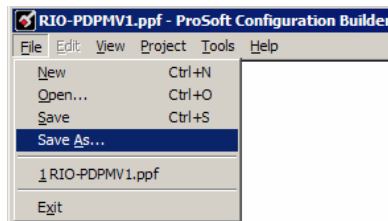
In order for the module to use the PROFIBUS network settings you configured, you must download (copy) the updated Project file from your PC to the module.

To Download the Project File

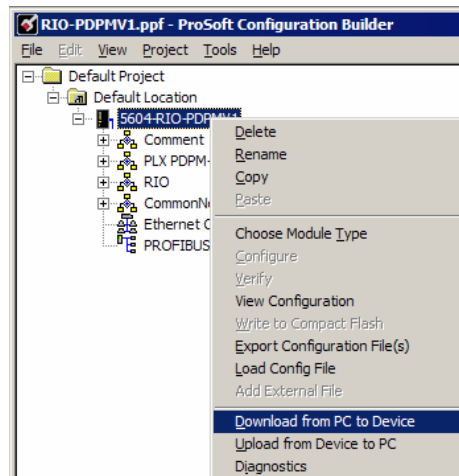
- 1 Connect your PC to the DEBUG port of the 5604-RIO-PDPMV1 module.
Apply power to the module if you have not already done so.



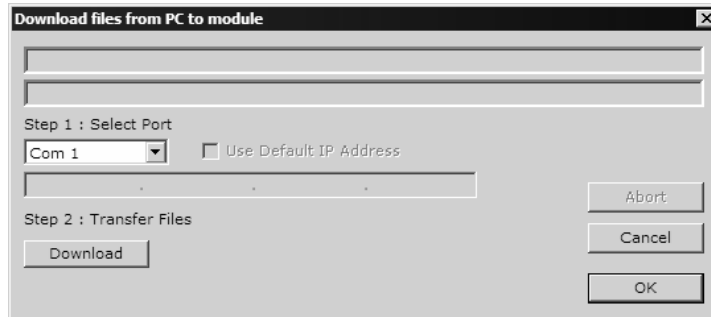
- 2 Choose **File / Save As...** and save the .PPF file to a location on your hard drive.



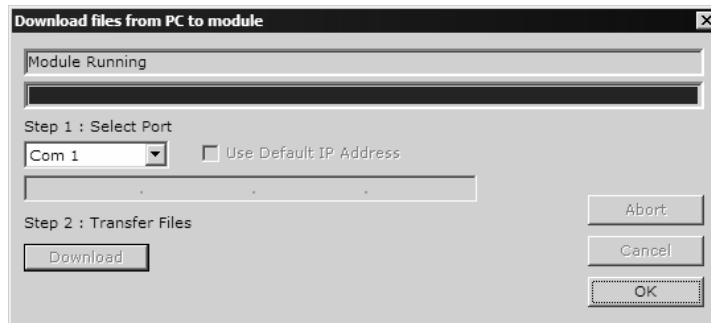
- 3 Right-click on 5604-RIO-PDPMV1 and select **Download from PC to Device**.



- 4 Open the **Project menu**, and then choose **Module / Download**. The program will scan your PC for a valid com port (this may take a few seconds). When PCB has found a valid com port, the following dialog box will open.



- 5 Choose the com port to use from the dropdown list, and then click the Download button.



- 6 The download is complete when the OK button becomes active. When the download is complete, click **OK**. The module will perform a platform check to read and load its new settings. When the platform check is complete, the status bar in ProSoft Configuration Builder will be updated with the message "*Module Running*".

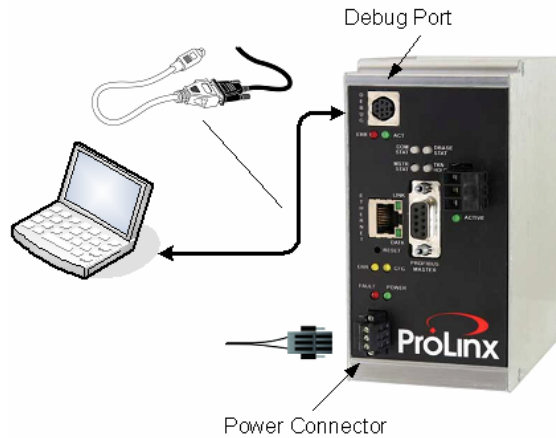
6 Verify Data Exchange

In This Chapter

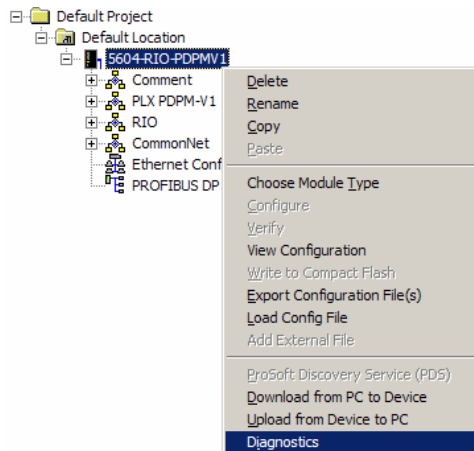
- ❖ Verify Cyclic Communication (PROFIBUS Slave I/O) 28
- ❖ Verify Acyclic Communication (Mailbox Messaging) 31

You must be connected and online to the PLC5 processor with RSLogix 5, and to the module with ProSoft Configuration Builder to perform these tests.

- 1 Connect to the Debug Port on the 5604-RIO-PDPMV1 module. Ensure that power is applied to the module.



- 2 Right-click on 5604-RIO-PDPMV1 and select Diagnostics.



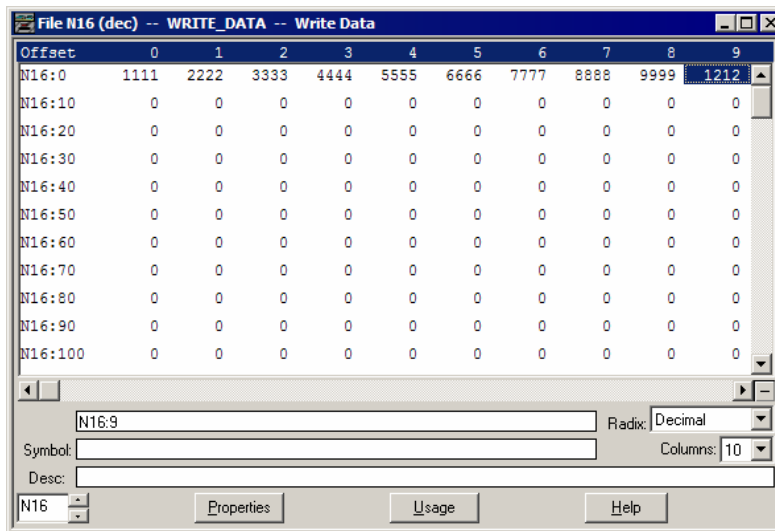
- 3 Select the appropriate Com port



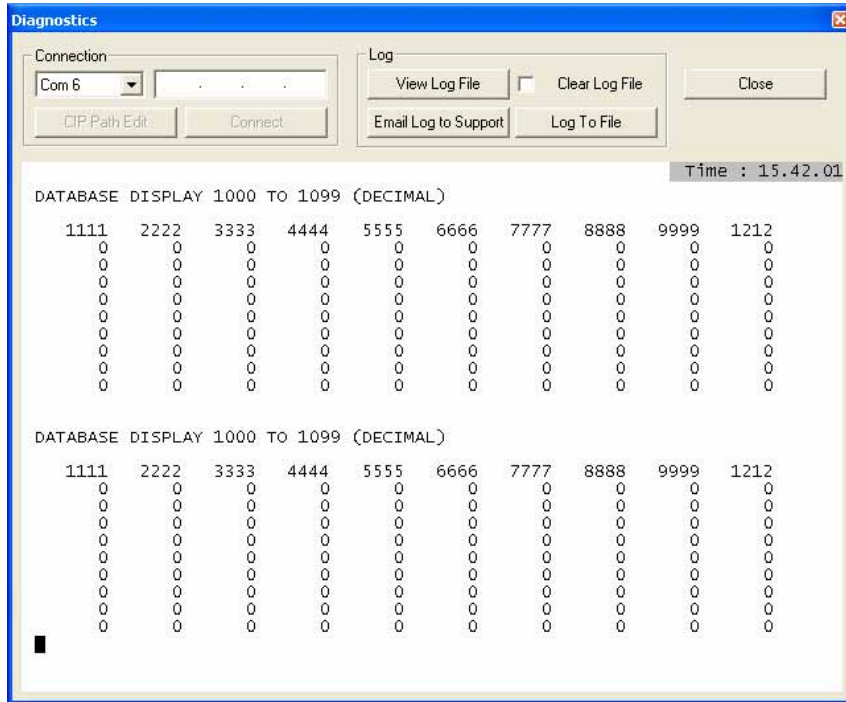
- 4 Press "?" to display the Diagnostic menu.

6.1 Verify Cyclic Communication (PROFIBUS Slave I/O)

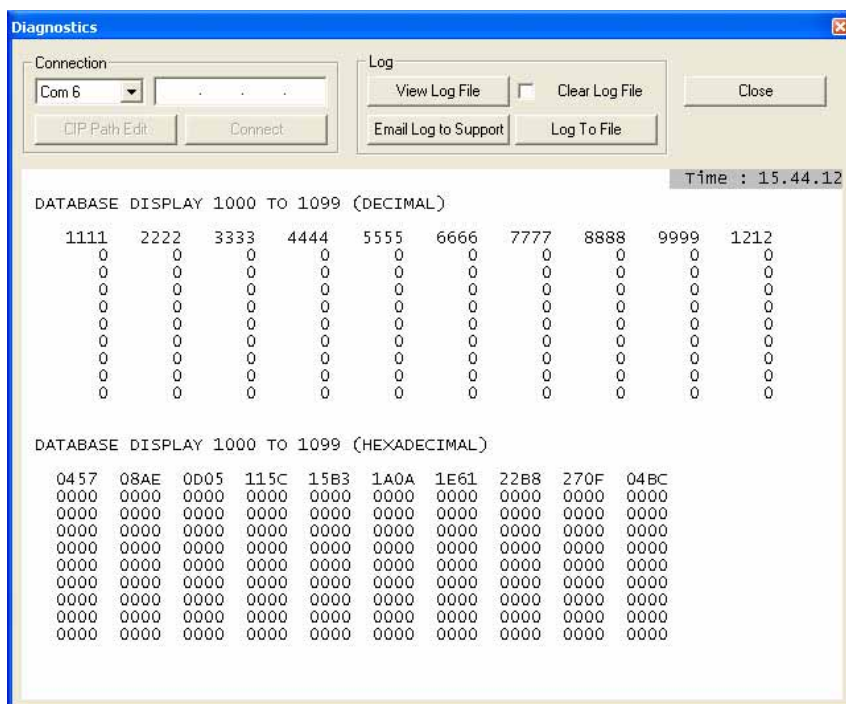
- 1 For this example, open the sample program in RSLogix 5, and then double-click to open data file N16. Enter the values in this illustration at offset N16:0.



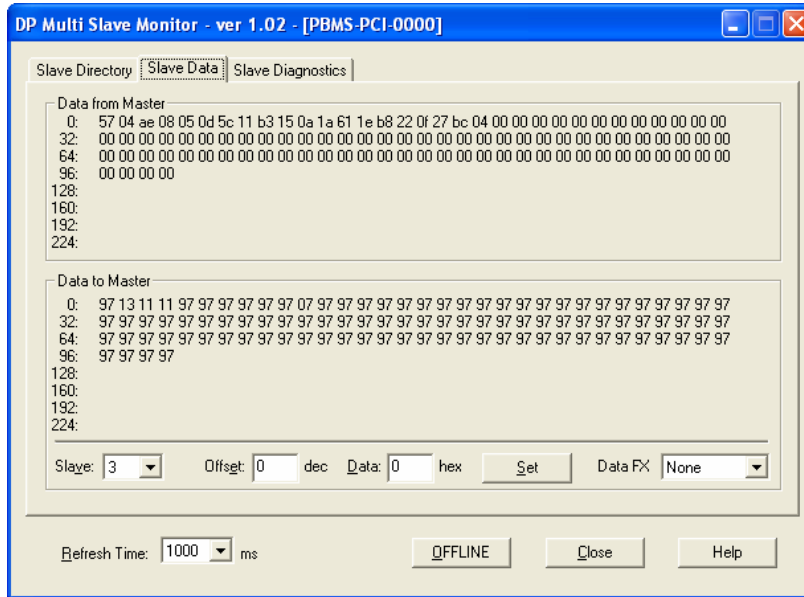
- In the ProSoft Configuration Builder Diagnostics window, navigate to the module's Database menu. Observe that the values you entered in N16:0 now appear in the output area of the module's database, starting at address 1000. The following illustration shows the module's database in Decimal format.



Press [H] to view the same values in Hexadecimal format.



- The 5604-RIO-PDPMV1 module now passes these values to the PROFIBUS slaves. Note that the destination for this data depends on the PROFIBUS network configuration. In this example, Slave #3 is configured as the destination. The following illustration shows an application that queries the PROFIBUS slave and shows the results in a dialog box.



- Observe that the values in the first line of the Data from Master pane match the values in the hexadecimal database display in the ProSoft Configuration Builder Diagnostics window in Step 2.

6.2 Verify Acyclic Communication (Mailbox Messaging)


The PROFIBUS DP V1 Master uses mailbox messages for acyclic communication with other devices on the PROFIBUS network. Acyclic data is transmitted in parallel with cyclic data communication, but with lower priority.

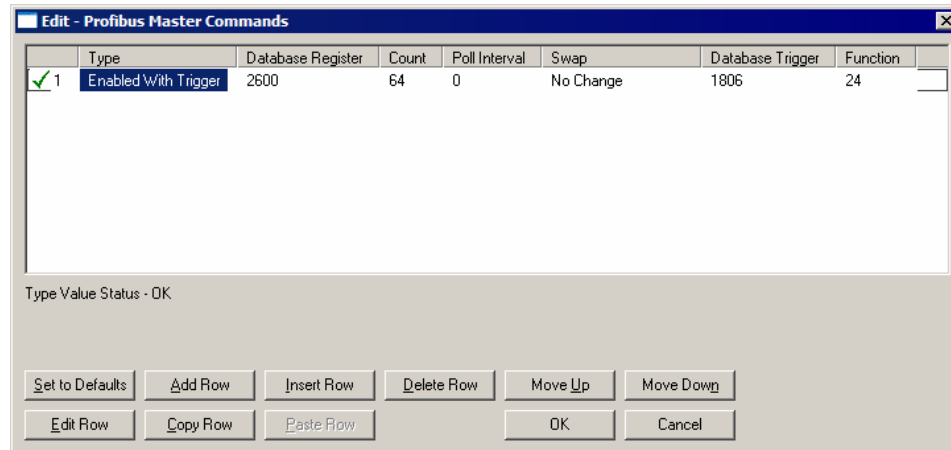
Each type of mailbox message has its own configuration area in PCB. In the example configuration, the following mailbox messages are configured:

- Set Operate Mode
- Get Slave Diagnostic Data
- Get Slave Configuration
- Get Database Information
- Get Live List
- Acyclic Read
- Acyclic Write

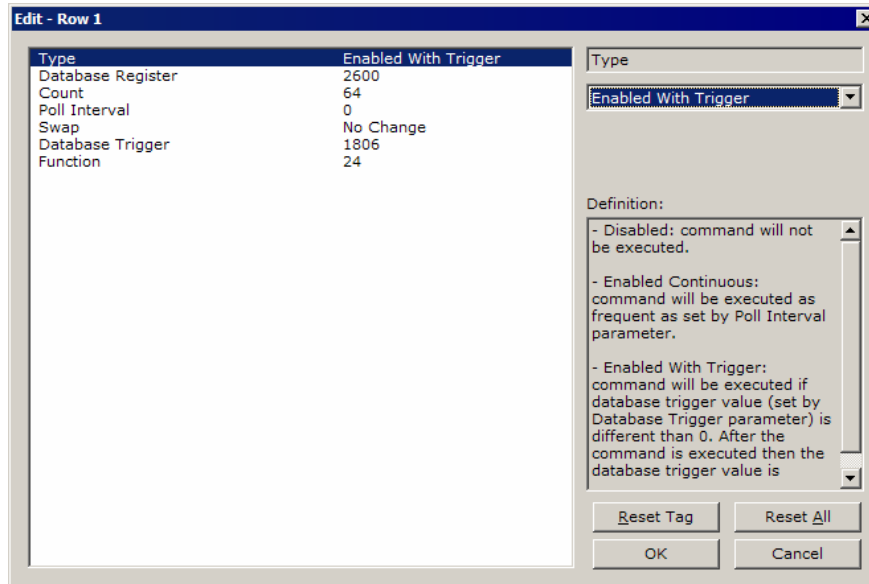
A mailbox command is executed when the PLC5 ladder logic sets a non-zero trigger value via Remote I/O in the specified location in the 5604-RIO-PDPMV1 database. When the command is triggered, the module resets the trigger value to zero to wait for the next command.

For this example, we will trigger the Get Live List mailbox command.

- 1 In ProSoft Configuration Builder, double-click on the  Profibus Master Commands Get Live List icon. This action opens the Edit Profibus Master Commands dialog box, populated with one command.

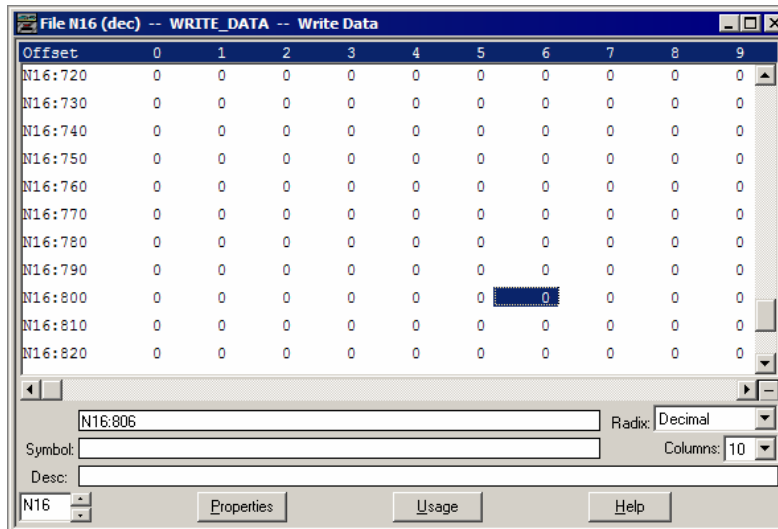


- 2 Double-click the command. This action opens the Edit dialog box.

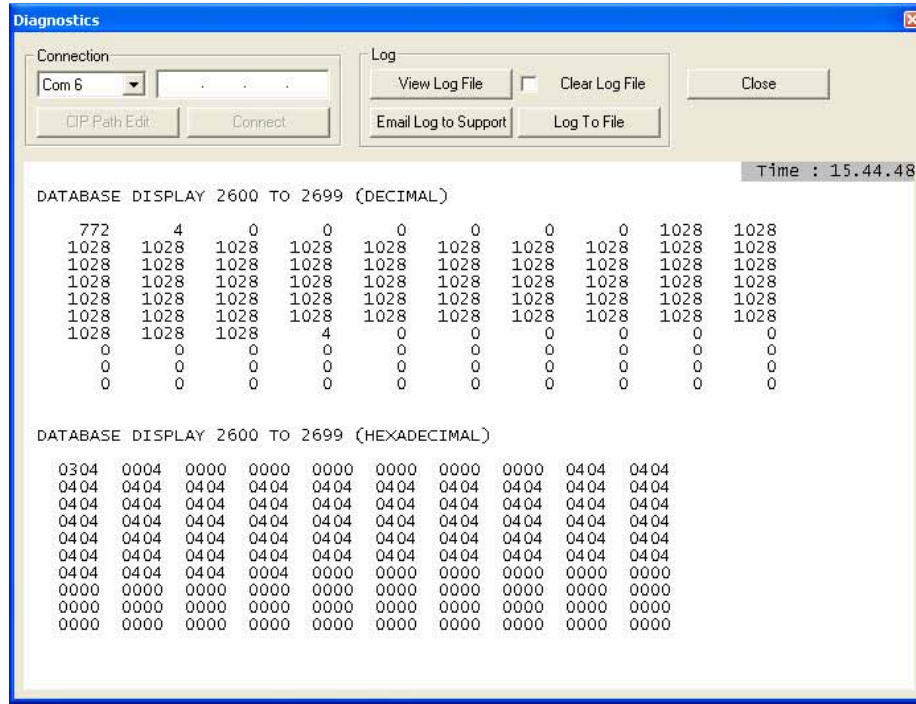


For this command, the module will check database register 1806. If the value at register 1806 is non-zero (the Count value), the module will send the data at register address 2600 to the PROFIBUS network.

This register corresponds to register N16:806 in the PLC5 processor. To trigger the command, change the value of register N16:806 from 0 to 1. This value is immediately transmitted from the PLC5 processor to the 5604-RIO-PDPMV1 module.



- 3 In the following illustration, the ProSoft Configuration Builder diagnostics window shows the result of the command in the 5604-RIO-PDPMV1 database.



- 4 The hexadecimal data includes the following values:
- A hex value of 3 represents a PROFIBUS Master.
 - A hex value of 4 represents a PROFIBUS Slave.
 - A hex value of 0 represents a PROFIBUS Slave that is offline.

In the illustration above, register 0304 (the bytes are swapped) indicates that Slave address 0 is offline. The Master is at address 1. The second register (0004) indicates that Slave address 2 is offline and Slave address 3 is online. The third register (0000) indicates that slaves 4 and 5 are online.

7 Next Steps

Now that you have installed, configured and verified the 5604-RIO-PDPMV1 module, the next step is to incorporate the module into your own application.

- For more information about ProLinx modules in general, including detailed hardware and software configuration, troubleshooting and application information, refer to the *ProLinx Reference Guide*.
- For more information about how the ProLinx module implements the Rockwell Automation® Remote I/O protocol, refer to the *RIO Driver Manual*.
- For more information about how the ProLinx module implements the PROFIBUS DP-V1 Master protocol, refer to the *PDPMV1 Driver Manual*.
- For technical support and warranty information for your ProLinx module, refer to Support, Service and Warranty (page 37) in this manual.
- For more information on ProSoft Technology products and services, please visit <http://www.prosoft-technology.com>.

8 Support, Service & Warranty

In This Chapter

- ❖ How to Contact Us: Technical Support..... 37
- ❖ Return Material Authorization (RMA) Policies and Conditions..... 38
- ❖ LIMITED WARRANTY..... 39

ProSoft Technology, Inc. (ProSoft) is committed to providing the most efficient and effective support possible. Before calling, please gather the following information to assist in expediting this process:

- 1 Product Version Number
- 2 System architecture
- 3 Network details

If the issue is hardware related, we will also need information regarding:

- 1 Module configuration and contents of file
 - Module Operation
 - Configuration/Debug status information
 - LED patterns
- 2 Information about the processor and user data files as viewed through and LED patterns on the processor.
- 3 Details about the serial devices interfaced, if any.

8.1 How to Contact Us: Technical Support

Internet	Web Site: http://www.prosoft-technology.com/support
	E-mail address: support@prosoft-technology.com

Asia Pacific

+603.7724.2080, support.asia@prosoft-technology.com
Languages spoken include: Chinese, English

Europe (location in Toulouse, France)

+33 (0) 5.34.36.87.20, support.EMEA@prosoft-technology.com
Languages spoken include: French, English

North America/Latin America (excluding Brasil) (location in California)

+1.661.716.5100, support@prosoft-technology.com
Languages spoken include: English, Spanish

For technical support calls within the United States, an after-hours answering system allows pager access to one of our qualified technical and/or application support engineers at any time to answer your questions.

Brasil (location in Sao Paulo)

+55-11-5084-5178, eduardo@prosoft-technology.com
Languages spoken include: Portuguese, English

8.2 Return Material Authorization (RMA) Policies and Conditions

The following RMA Policies and Conditions (collectively, "RMA Policies") apply to any returned Product. These RMA Policies are subject to change by ProSoft without notice. For warranty information, see "Limited Warranty". In the event of any inconsistency between the RMA Policies and the Warranty, the Warranty shall govern.

8.2.1 All Product Returns:

- a) In order to return a Product for repair, exchange or otherwise, the Customer must obtain a Returned Material Authorization (RMA) number from ProSoft and comply with ProSoft shipping instructions.
- b) In the event that the Customer experiences a problem with the Product for any reason, Customer should contact ProSoft Technical Support at one of the telephone numbers listed above (page 37). A Technical Support Engineer will request that you perform several tests in an attempt to isolate the problem. If after completing these tests, the Product is found to be the source of the problem, we will issue an RMA.
- c) All returned Products must be shipped freight prepaid, in the original shipping container or equivalent, to the location specified by ProSoft, and be accompanied by proof of purchase and receipt date. The RMA number is to be prominently marked on the outside of the shipping box. Customer agrees to insure the Product or assume the risk of loss or damage in transit. Products shipped to ProSoft using a shipment method other than that specified by ProSoft or shipped without an RMA number will be returned to the Customer, freight collect. Contact ProSoft Technical Support for further information.
- d) A 10% restocking fee applies to all warranty credit returns whereby a Customer has an application change, ordered too many, does not need, etc.

8.2.2 Procedures for Return of Units Under Warranty:

A Technical Support Engineer must approve the return of Product under ProSoft's Warranty:

- a) A replacement module will be shipped and invoiced. A purchase order will be required.
- b) Credit for a product under warranty will be issued upon receipt of authorized product by ProSoft at designated location referenced on the Return Material Authorization.

8.2.3 Procedures for Return of Units Out of Warranty:

- a) Customer sends unit in for evaluation
- b) If no defect is found, Customer will be charged the equivalent of \$100 USD, plus freight charges, duties and taxes as applicable. A new purchase order will be required.

- c) If unit is repaired, charge to Customer will be 30% of current list price (USD) plus freight charges, duties and taxes as applicable. A new purchase order will be required or authorization to use the purchase order submitted for evaluation fee.

The following is a list of non-repairable units:

- 3150 - All
- 3750
- 3600 - All
- 3700
- 3170 - All
- 3250
- 1560 - Can be repaired, only if defect is the power supply
- 1550 - Can be repaired, only if defect is the power supply
- 3350
- 3300
- 1500 - All

8.2.4 Purchasing Warranty Extension:

- a) ProSoft's standard warranty period is three (3) years from the date of shipment as detailed in "Limited Warranty (page 39)". The Warranty Period may be extended at the time of equipment purchase for an additional charge, as follows:
- Additional 1 year = 10% of list price
 - Additional 2 years = 20% of list price
 - Additional 3 years = 30% of list price

8.3 LIMITED WARRANTY

This Limited Warranty ("Warranty") governs all sales of hardware, software and other products (collectively, "Product") manufactured and/or offered for sale by ProSoft, and all related services provided by ProSoft, including maintenance, repair, warranty exchange, and service programs (collectively, "Services"). By purchasing or using the Product or Services, the individual or entity purchasing or using the Product or Services ("Customer") agrees to all of the terms and provisions (collectively, the "Terms") of this Limited Warranty. All sales of software or other intellectual property are, in addition, subject to any license agreement accompanying such software or other intellectual property.

8.3.1 What Is Covered By This Warranty

- a) *Warranty On New Products:* ProSoft warrants, to the original purchaser, that the Product that is the subject of the sale will (1) conform to and perform in accordance with published specifications prepared, approved and issued by ProSoft, and (2) will be free from defects in material or workmanship; provided these warranties only cover Product that is sold as new. This Warranty expires three years from the date of shipment (the "Warranty Period"). If the Customer discovers within the Warranty Period a failure of the Product to conform to specifications, or a defect in material or workmanship of the Product, the Customer must promptly notify ProSoft by fax, email or telephone. In no event may that notification be received by ProSoft later than 39 months. Within a reasonable time after notification, ProSoft will correct any failure of the Product to conform to specifications or any defect in material or workmanship of the Product, with either new or used replacement parts. Such repair, including both parts and labor, will be performed at ProSoft's expense. All warranty service will be performed at service centers designated by ProSoft.
- b) *Warranty On Services:* Materials and labor performed by ProSoft to repair a verified malfunction or defect are warranted in the terms specified above for new Product, provided said warranty will be for the period remaining on the original new equipment warranty or, if the original warranty is no longer in effect, for a period of 90 days from the date of repair.

8.3.2 What Is Not Covered By This Warranty

- a) ProSoft makes no representation or warranty, expressed or implied, that the operation of software purchased from ProSoft will be uninterrupted or error free or that the functions contained in the software will meet or satisfy the purchaser's intended use or requirements; the Customer assumes complete responsibility for decisions made or actions taken based on information obtained using ProSoft software.
- b) This Warranty does not cover the failure of the Product to perform specified functions, or any other non-conformance, defects, losses or damages caused by or attributable to any of the following: (i) shipping; (ii) improper installation or other failure of Customer to adhere to ProSoft's specifications or instructions; (iii) unauthorized repair or maintenance; (iv) attachments, equipment, options, parts, software, or user-created programming (including, but not limited to, programs developed with any IEC 61131-3, "C" or any variant of "C" programming languages) not furnished by ProSoft; (v) use of the Product for purposes other than those for which it was designed; (vi) any other abuse, misapplication, neglect or misuse by the Customer; (vii) accident, improper testing or causes external to the Product such as, but not limited to, exposure to extremes of temperature or humidity, power failure or power surges; or (viii) disasters such as fire, flood, earthquake, wind and lightning.

- c) The information in this Agreement is subject to change without notice. ProSoft shall not be liable for technical or editorial errors or omissions made herein; nor for incidental or consequential damages resulting from the furnishing, performance or use of this material. The user guide included with your original product purchase from ProSoft contains information protected by copyright. No part of the guide may be duplicated or reproduced in any form without prior written consent from ProSoft.

8.3.3 Disclaimer Regarding High Risk Activities

Product manufactured or supplied by ProSoft is not fault tolerant and is not designed, manufactured or intended for use in hazardous environments requiring fail-safe performance including and without limitation: the operation of nuclear facilities, aircraft navigation of communication systems, air traffic control, direct life support machines or weapons systems in which the failure of the product could lead directly or indirectly to death, personal injury or severe physical or environmental damage (collectively, "high risk activities"). ProSoft specifically disclaims any express or implied warranty of fitness for high risk activities.

8.3.4 Intellectual Property Indemnity

Buyer shall indemnify and hold harmless ProSoft and its employees from and against all liabilities, losses, claims, costs and expenses (including attorney's fees and expenses) related to any claim, investigation, litigation or proceeding (whether or not ProSoft is a party) which arises or is alleged to arise from Buyer's acts or omissions under these Terms or in any way with respect to the Products. Without limiting the foregoing, Buyer (at its own expense) shall indemnify and hold harmless ProSoft and defend or settle any action brought against such Companies to the extent based on a claim that any Product made to Buyer specifications infringed intellectual property rights of another party. ProSoft makes no warranty that the product is or will be delivered free of any person's claiming of patent, trademark, or similar infringement. The Buyer assumes all risks (including the risk of suit) that the product or any use of the product will infringe existing or subsequently issued patents, trademarks, or copyrights.

- a) Any documentation included with Product purchased from ProSoft is protected by copyright and may not be duplicated or reproduced in any form without prior written consent from ProSoft.
- b) ProSoft's technical specifications and documentation that are included with the Product are subject to editing and modification without notice.
- c) Transfer of title shall not operate to convey to Customer any right to make, or have made, any Product supplied by ProSoft.
- d) Customer is granted no right or license to use any software or other intellectual property in any manner or for any purpose not expressly permitted by any license agreement accompanying such software or other intellectual property.

- e) Customer agrees that it shall not, and shall not authorize others to, copy software provided by ProSoft (except as expressly permitted in any license agreement accompanying such software); transfer software to a third party separately from the Product; modify, alter, translate, decode, decompile, disassemble, reverse-engineer or otherwise attempt to derive the source code of the software or create derivative works based on the software; export the software or underlying technology in contravention of applicable US and international export laws and regulations; or use the software other than as authorized in connection with use of Product.
- f) **Additional Restrictions Relating To Software And Other Intellectual Property**

In addition to compliance with the Terms of this Warranty, Customers purchasing software or other intellectual property shall comply with any license agreement accompanying such software or other intellectual property. Failure to do so may void this Warranty with respect to such software and/or other intellectual property.

8.3.5 Disclaimer of all Other Warranties

The Warranty set forth in What Is Covered By This Warranty (page 40) are in lieu of all other warranties, express or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose.

8.3.6 Limitation of Remedies **

In no event will ProSoft or its Dealer be liable for any special, incidental or consequential damages based on breach of warranty, breach of contract, negligence, strict tort or any other legal theory. Damages that ProSoft or its Dealer will not be responsible for included, but are not limited to: Loss of profits; loss of savings or revenue; loss of use of the product or any associated equipment; loss of data; cost of capital; cost of any substitute equipment, facilities, or services; downtime; the claims of third parties including, customers of the Purchaser; and, injury to property.

** Some areas do not allow time limitations on an implied warranty, or allow the exclusion or limitation of incidental or consequential damages. In such areas, the above limitations may not apply. This Warranty gives you specific legal rights, and you may also have other rights which vary from place to place.

8.3.7 Time Limit for Bringing Suit

Any action for breach of warranty must be commenced within 39 months following shipment of the Product.

8.3.8 No Other Warranties

Unless modified in writing and signed by both parties, this Warranty is understood to be the complete and exclusive agreement between the parties, suspending all oral or written prior agreements and all other communications between the parties relating to the subject matter of this Warranty, including statements made by salesperson. No employee of ProSoft or any other party is authorized to make any warranty in addition to those made in this Warranty. The Customer is warned, therefore, to check this Warranty carefully to see that it correctly reflects those terms that are important to the Customer.

8.3.9 Allocation of Risks

This Warranty allocates the risk of product failure between ProSoft and the Customer. This allocation is recognized by both parties and is reflected in the price of the goods. The Customer acknowledges that it has read this Warranty, understands it, and is bound by its Terms.

8.3.10 Controlling Law and Severability

This Warranty shall be governed by and construed in accordance with the laws of the United States and the domestic laws of the State of California, without reference to its conflicts of law provisions. If for any reason a court of competent jurisdiction finds any provisions of this Warranty, or a portion thereof, to be unenforceable, that provision shall be enforced to the maximum extent permissible and the remainder of this Warranty shall remain in full force and effect. Any cause of action with respect to the Product or Services must be instituted in a court of competent jurisdiction in the State of California.

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