

ProLinx Series 6000-WA Communication Module Installation Guide

Revision 1.05



August 04, 2004

ProSoft Technology, Inc.

1675 Chester Ave Fourth Floor

Bakersfield, CA 93301

661-716-5100

Fax: 661-716-5101

prosoft@prosoft-technology.com

<http://www.prosoft-technology.com>



Related Documents & Reference Materials

Several resources are available to assist with the configuration and support of the ProSoft Communication modules. Setup and configuration files are available off the ftp site (note: the ftp site is case sensitive):

PRELIMINARY

Important Notice

Successful application of the ProSoft Communication module requires a reasonable working knowledge of the hardware 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 gateway product 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 the manual thoroughly.

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

Reproduction of the contents of this manual, in whole or in part, without written permission from ProSoft Technology, Inc. is prohibited.

Information in this manual is subject to change without notice and does not represent a commitment on the part of ProSoft Technology, Inc. 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.

Technical Support

ProSoft Technology, Inc. survives on its ability to provide meaningful support to its customers. Should any questions or problems arise, please feel free to contact us at:

Factory/Technical Support

ProSoft Technology, Inc.
1675 Chester Ave. Fourth Floor
Bakersfield, CA 93301 USA
(661) 716-5100
(661) 716-5101 (fax)

E-mail address: prosoft@prosoft-technology.com
Web Site : <http://www.prosoft-technology.com>

Before calling for support, please prepare yourself for the call. In order to provide the best and quickest support possible, we will most likely ask for the following information (you may wish to fax it to us prior to calling):

1. Product Version Number
2. Configuration Information
 - Communication Configuration
 - Jumper positions
3. System hierarchy
4. Physical connection information
 - RS-232, 422 or 485
 - Cable configuration
5. Module Operation
 - LED patterns

An after-hours answering system (on the Bakersfield number) allows pager access to one of our qualified technical and/or application support engineers at any time to answer the questions that are important to you.

Product Revision History

Revision	Description	Date
1.01	First public release	8/04/04
1.02	Include Pertinent FCC Information	9/15/04
1.03	Include Important Industry Canada Information	10/01/04
1.04	Include more FCC Information	10/04/04
1.05	Include more FCC Information	10/06/04

Important Installation Instructions

Power, input and output wiring must be in accordance with Class I, Division 2 wiring methods – Article 501-4 (b) of the National Electrical Code, NFPA 70 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.”

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 RESOPNSIBLE 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."

Quick Start Guide

This section describes the procedure used to set up the module for communications. These steps should be followed for successful implementation of a module in a user application.

Download Documentation

User manuals, utilities and other documentation are available electronically off the FTP site. In order to proceed most expediently, the following files should be considered for download:

Protocol Manuals

Most of the products consist of bringing two protocols together. The protocols are documented individually. Proceed to the FTP site and locate the desired protocol documents.

ftp.prosoft-technology.com/pub/ProLinx/Protocol_Manuals/

Note that if using an Ethernet protocol interface such as the DFNT or MNET, that the WEB Manual should also be downloaded

Module Configuration and Debug Manual

Configuration Files (CFG file)

If needed, the CFG file for the individual units is available on the ftp site. This file is also available from the shipping module itself.

<ftp.prosoft-technology.com/pub/ProLinx/Configurations/>

Layout the project

Step	Descriptions	Reference Manual
1	Determine the communication configuration for the serial communication ports (baud rate, stop bits, timing requirements, etc.)	Serial Protocol Manual (i.e., MCM, DFCM, etc. Protocol Manual)
2	Determine the communication configuration for other communication ports (Remote I/O, Ethernet, etc.)	Protocol Manual (i.e, DFNT, MNET, RIO, etc.)
3	If one or more of the serial ports is a master port, define the command list.	Serial Protocol Manual if a serial port master, or Ethernet protocol manual if a client.
4	Define the data ranges to be transferred between (read and write) between the ProLinx module and the chosen protocol (e.g. Remote IO scanner).	
5	Edit the .CFG file per the steps above to reflect the needs of the application. A copy of the default configuration file can be uploaded from the module or downloaded off the web	Module Configuration & Debug Port Manual

Download the configuration file

Reference the 'Module Configuration & Debug Port Manual'.

Table of Contents

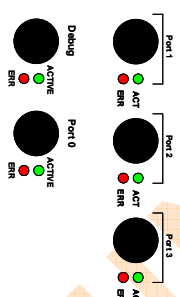
1	Product Overview	1
1.1	Serial Port(s)	1
1.2	Module Internal Database	1
1.2.1	Protocol Driver Access to Database	2
2	Product Specifications	4
2.1	Hardware Specifications and Equipment Ratings	4
3	Installing & Mounting the Module	6
3.1	Debug and Port 0 Configuration Jumpers	6
3.2	DIN Rail Mounting the Unit	6
3.3	Connecting Power to the Unit	7
4	Electronic Configuration File	8
4.1	Overview and Purpose of Configuration file	8
4.2	Example CFG File Structure	8
5	CFG File : [MODULE] Section	9
6	LED Indicators	10
7	Error and Status Data	12
7.1	Module Status Data – Non-Ethernet modules	12
7.2	Module Status Data – Ethernet based modules	12
7.3	Serial Port Status and Other Protocol Driver Status	13
8	Example Configuration File : DFNTDFCM.CFG	14
	Service and Warranty Statement	17

1 Product Overview

The ProSoft Technology, Inc. communication modules are used to interface different protocols to each other. The list of protocols supported by the ProLinx units is extensive and growing. The available drivers act as Masters (Clients in Ethernet), Slaves (Servers in Ethernet) and in some cases as peers on their respective communication networks.

1.1 Serial Port(s)

The ProLinx module serial ports are capable of supporting several protocols (ex. Modbus, DF1, DNP 3.0, etc.) as either a Master or Slave on up to four ports. Each of the ports is individually configurable, providing a great deal of flexibility.



The relationship between the port labeling on the front of the ProLinx module and the application is as follows:

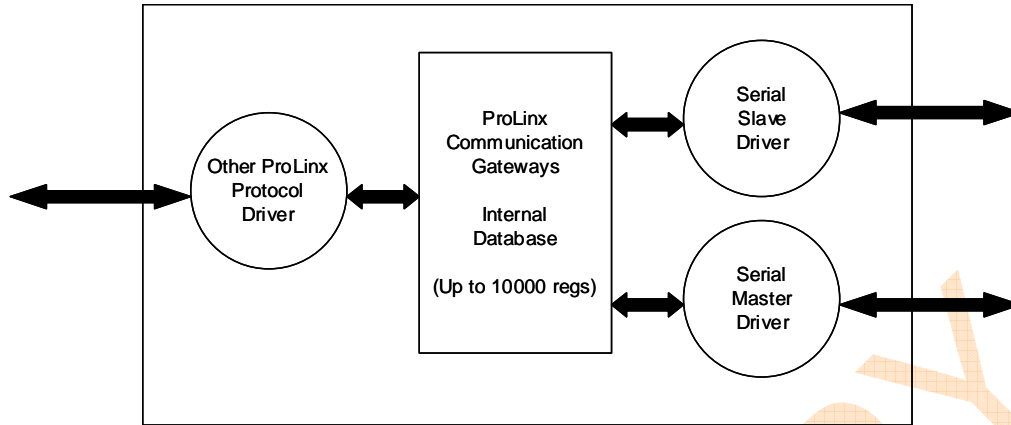
Port Label	Function
Debug	Debug/Configuration
Port 0	Serial Port 0
Following ports only exist on multiple port units	
Port 1	Serial Port 1
Port 2	Serial Port 2
Port 3	Serial Port 3

When configured as a Master port, the serial ports can be used to continuously interface with slave devices over a serial communication interface (RS-232, RS-422 or RS-485). Each Master port supports 100 user defined commands which determine the read/write commands issued to each slave attached to the port.

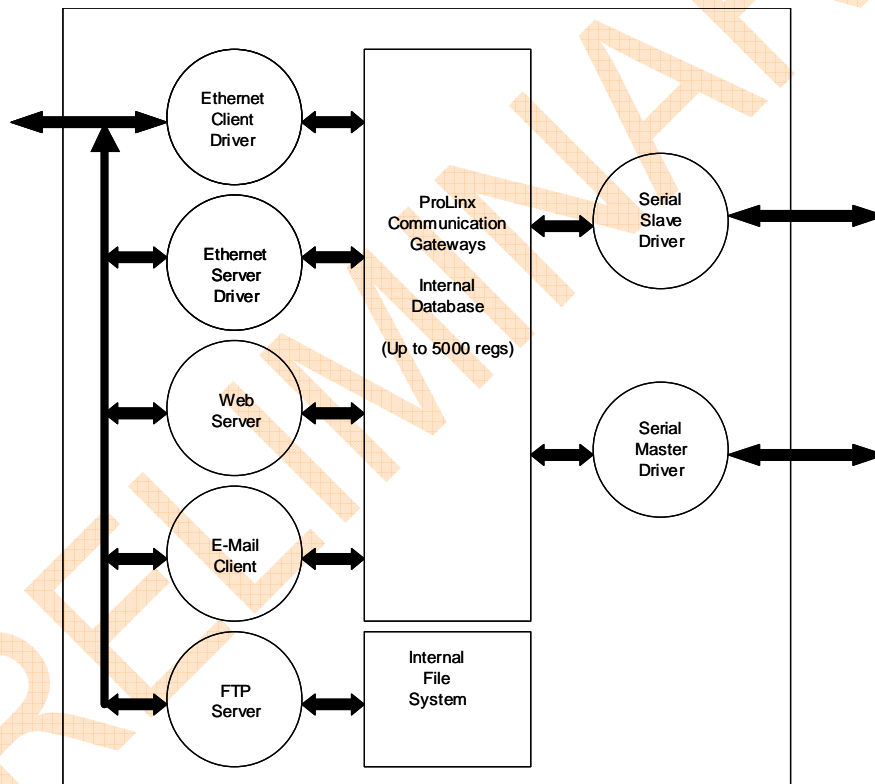
In addition, the module can be configured to place slave devices that are not responding to commands at a lower priority. If the module recognizes that a slave device has failed to respond to a message after the user defined retry count, it will mark the slave as "in communication failure" and set the error delay counter to the user specified value.

1.2 Module Internal Database

Central to the functionality of the module is the internal database. This database is shared between all the ports on the module and is used as a conduit to pass information from one device on one network to one or more devices on another network. This permits data from devices on one communication port to be viewed and controlled by devices on another port.



Typical functional diagram for a non-Ethernet based unit



Typical functional diagram for an Ethernet based unit

In addition to data from the slave and master ports, status and error information generated by the module can also be mapped into the internal database.

1.2.1 Protocol Driver Access to Database

Master/Client drivers use the database in two ways:

1. A read command issued to a slave/server device by the master/client driver will return the slave/server data into the internal database
2. A write command issued to a slave/server device by the master/client driver uses the data in the internal database to write to the slave/server device

Slave/server drivers access data from the internal database. External master/client devices can monitor and control data in this database through these slave/server port(s). Setup of the slave/server ports only requires the CFG file.

In addition to data from the slave/server and master/client ports, status and error information generated by the module can also be mapped into the internal database.

PRELIMINARY

2 Product Specifications

2.1 Hardware Specifications and Equipment Ratings

Type	Specifications
Serial Ports	
Serial Port Cable (DB-9M Connector)	A mini-DIN to DB-9M cable is included with the unit when shipped from the factory
Debug	RS-232/422/485 – jumper selectable DB-9M connector No hardware handshaking
Serial Port Isolation	2500V RMS port-to-port isolation per UL 1577. 3000V DC min. port to ground and port to logic power isolation.
Serial Port Protection	RS485/422 port interface lines TVS diode protected at +/- 27V standoff voltage. RS232 port interface lines fault protected to +/- 36V power on, +/- 40V power off.
General Signal Connections	For highest EMI/RFI immunity, signal connections shall use the interconnect cable as specified by the protocol in use. Interconnect cable shields shall be connected to earth ground.
Example Interconnect Cable Types	Rockwell Automation RIO and DH+ protocols use Belden 9463 type shielded cable or equivalent. Schneider Electric Modbus Plus protocol uses Belden 9841 type shielded cable or equivalent.

Power	
External Power	Supply Voltage: 24 VDC nominal 18-36 VDC allowed Supply Current: 500 ma (max. at 24 VDC) Center terminal shall be connected to earth ground.
Power Connector	+/-GND screw connectors, rated for 24 AWG to 14 AWG tinned copper, stranded, insulated wire. Use 2.5 mm screwdriver blade.

Environmental	
Operating Temperature	0 to 50° C (32 to 122° F)
Storage Temperature	-40 to 85° C (-40 to 185° F)
Relative Humidity	5 to 95% (non-condensing)
Shock (Unpackaged)	Operational - Pending testing Non-operational - Pending testing
Vibration (Unpackaged)	Pending testing
Dimensions	5.20H x 2.07 W x 4.52 D inches 132 H x 52.6 W x 115.6 D mm
Weight (max.)	1.5 lbs (680 g) max
Altitude	Shipping and storage: up to 3000 m (9843 Feet). Operation: up to 2000 m (6562 Feet).
Corrosion Immunity	Rated in accordance with IEC 68.

Pollution Degree	Rated to pollution degree 2. Equipment may be exposed to non-conductive pollution. Occasional conductivity due to condensation may occur. Equipment may not function properly until condensation evaporates.
Overvoltage Category	Rated to overvoltage category I. Reverse polarity, improper lead connection, and/or voltages outside of the range of 18 VDC to 36 VDC applied to the power connector may damage the equipment.

PRELIMINARY

3 Installation & Mounting of the Module

In order to succeed with the physical installation of the ProLinX Communication module, several steps must be taken. These are outlined here in order of execution.

3.1 Debug and Port 0 Configuration Jumpers

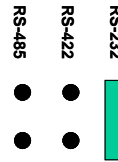
Prior to mounting the ProLinX module on the DIN rail, the jumpers for the Port 0 protocol port must be set.

As shipped from the factory, both of these ports are set for RS-232. This should be verified by the user in the field to assure this is the case and to minimize startup problems.

The following diagrams detail the jumper positions for each of the ports:

Rear View of ProLinX Module

Jumper Detail
Port 0



3.2 DIN Rail Mounting the Unit

3.3 Connecting Power to the Unit



4 Electronic Configuration File

This section of the documentation describes the configuration data required by the communication module. It is important that the module be configured accurately for reliable and correct operation.

4.1 Overview and Purpose of Configuration file

All configuration information for the module is stored in a text file with a filename specific to the product. Examples include:

6201-WA-DFNT-DFCM	DFNTDFCM.CFG
6204-WA-RIO-MCM	RIOMCM.CFG

The file (herein referred to as the CFG file) contains the configuration for the internal database, the port communication parameters and the command list data for the master ports.

An example CFG file is shipped in the module (i.e., module is pre-configured) and should be used as a starting point for configuration (A copy of this file is available for downloading off our ftp site – see ‘Related Documents & Reference Materials’ in front of this manual).

Use any text editor (Wordpad in Windows works very well) you are familiar with to edit the data in the file.

When you have completed editing the file, download it to the module using a terminal emulation software. If using a module containing hardware version 1, use the program provided by ProSoft Technology, Inc. (PSTerm, available off the ftp site -see ‘Related Documents & Reference Materials’ in front of this manual). If using a version 2 module with the ver 2.00 sticker on it, any terminal program can be used.

See the ‘Module Configuration and Debug Port Manual’ for more details.

4.2 Example CFG File Structure

The text file is separated into ten sections with topic header names enclosed in the [] ‘bracket’ characters. The sections present in the file are as follows:

[Section]	Description	Reference Manual
[MODULE]	General module configuration information	This user manual
[RIO]	Configuration data for remote I/O interface	RIO Protocol Driver Manual
[PORT 0 MODBUS]	Configuration data for Modbus Port 0	MCM Protocol Driver Manual
[PORT 0 COMMANDS]	Command list for Port 0 Modbus Master	

The following sections are only required if using the multiple serial protocol port unit (MCM4 unit).

[Section]	Description	Reference Manual
[PORT 1 MODBUS]	Configuration data for Modbus Port 1	MCM Protocol Driver Manual
[PORT 1 COMMANDS]	Command list for Port 1 Modbus Master	
[PORT 2 MODBUS]	Configuration data for Modbus Port 2	
[PORT 2 COMMANDS]	Command list for Port 2 Modbus Master	
[PORT 3 MODBUS]	Configuration data for Modbus Port 3	
[PORT 3 COMMANDS]	Command list for Port 3 Modbus Master	

5 CFG File: [MODULE] Section

The [MODULE] section of the CFG file is used to define the internal database and to set the module's name. The table below lists the parameters defined in this section:

[Section]/Item	Range	Description
[MODULE]		Configuration header for general module information
Module Name:	Up to 80 chars	Name of the module for use on reports. Use this parameter to identify the module.
Maximum Register:	0 to 10000	Maximum number of registers for the module's internal database. Most applications should use a value of 10000 for this parameter.
Error Status Pointer:	-1 to 9940	Starting register location in the internal database for the error/status table. If a value of -1 is entered, the error/status data will not be placed in the database. All other valid values determine the starting location of the data.

Add the following 'Items' to the [Module] Section when using an Ethernet based solution.

Local Domain Name:	Up to 80 chars	The name entered for this parameter is appended to the IP address along with the '@' symbol for e-mail transfers. This concatenated string is used in the "MAIL FROM:" section of the e-mail message. This parameter is required by most firewalls to permit the message to be transmitted. If the parameter is not found, the default value will be set to prosoft-technology.com. For example, if the parameter is set to "mycompany.com", the email will contain the following from address: 0.0.0.0@mycompany.com.
Password:	Up to 20 chars	This parameter is used to set the password for the module. If the parameter is not set, the module will not be password protected. If a password is present, it will be required for FTP access and for Web page POST functionality. The module interprets the password as a case-sensitive string. Do not include spaces or special characters in the password. Only alpha and numeric characters should be used.

6 LED Indicators

Troubleshooting the ProLinx modules can be performed in several fashions. There are visual indicators such as the LEDs which can be used to do a quick analysis of any problems. There is also a powerful Debug Terminal port on the module which gives much more complete access to the internal operations of the module.

Accessing the Debug capabilities of the module is accomplished easily by connecting a PC to the Debug port, loading PSTerm on a version 1 module (See Related Documents and Reference Materials in front of manual to download off web) or using a different terminal program in the version 2.

The following LEDs are fundamental to all ProLinx modules. Additional LEDs, as documented in the individual Protocol Driver Manuals (i.e., RIO, MCM, DFCM, etc.) may exist, depending on the hardware configuration of the module.

LED	Color	Description
Power	Off	Power is not connected to the power terminals. This LED is hardware driven, so it only requires power to operate
	Green	Power is connected to the power terminals. Verify the other LEDs for operational and functional status
Fault	Off	Normal operation
	Red	<p>If CFG LED not on - Critical error has occurred. Program executable has failed or has been user terminated and is no longer running. Pressing reset p/b or power cycle clear error. If not, user must connect to Debug port using procedures outlined in 'Module Configuration & Debug Port Manual'.</p> <p>If CFG LED is on solid – The Debug/Configuration mode is active (applies to units which support pass-through on the Debug port – such as DFCM units).</p>
CFG	Off	Normal operation
	Amber Solid	<p>If Fault LED is on – Debug/Configuration mode active (if unit supports pass-thru on Debug port – such as DFCM units)</p> <p>If FAULT LED is off – Unit is in the configuration mode. The configuration file is being read and the unit is implementing the configuration values and initializing the hardware. This will occur during power cycle, or after pressing reset pushbutton, or after a cold/warm boot command is received.</p>

APP ERR (Function is module dependent. Generally this LED applies to error not associated with serial port communications)	Off	Normal operation, no errors.
	Flashing	An error condition has been detected and is occurring. Check command configuration (if we are master, or client) or host configuration (if we are slave, adapter, or server)
	Solid Amber	This condition does not really exist and is indicative of a large number of errors in the application interface communications. The module's error flag is cleared at the start of each command (master/client) or receipt of data(slave/adapter/server)
Debug – Active Port 0 – Active	Off	No activity on the port.
	Green Flash	The port is either actively transmitting or receiving data
Debug – ERR Port 0 – ERR	Off	Normal state. When off and Port Active LED is indicating activity, there are no communication errors
	Amber On or Flashing	Activity on this LED indicates some communication error was detected, either during transmit or receive. To determine the exact error, connect the Debug terminal to the Debug port.

7 Error and Status Data

The module error/status data areas are discussed in this section. The module contains three areas related to this data. The user defines the locations of these data sets in the module's internal database when editing the CFG file. The Module Section and each of the protocol port sections have independent Error Status Pointer parameters that must be configured.

The three error/status data areas are as follows:

1. Module Status Data, consisting of Module revision and status information
2. Protocol Port status, consisting of Protocol data transfer status information
3. Serial Port status, consisting of individual port error and status information

7.1 Module Status Data – Non-Ethernet modules

The Module Status Data Block is located during configuration of the [MODULE] section of the CFG file into the module's internal data table. If the Error Status Pointer is set to -1, the data will not be placed in the database, and the status data will only be available through the Configuration/Debug Port. If a valid address is configured, the module will update the internal data area.

The Module Status Data area will be initialized with zeros whenever the module is initialized. This occurs during a cold-start (power-on), reset (reset push-button pressed) or a warm-boot operation (commanded or loading of new configuration).

The Module Status Data is contained in a nine (9) word register block. The structure of the block is shown below:

SYSTEM INFORMATION	
0	Program Cycle Counter
1	Product Name (ASCII) = RMCM
2	
3	Revision (ASCII)
4	
5	Operating System Rev (ASCII)
6	
7	Production Run Number (ASCII)
8	

7.2 Module Status Data – Ethernet based modules

In Ethernet based modules, the Module Status Data is contained in a 16 word register block. The structure of the block is shown below:

SYSTEM INFORMATION	
0	Program Cycle Counter
1	Product Name (ASCII) = RMCM
2	
3	Revision (ASCII)
4	
5	Operating System Rev (ASCII)
6	
7	Production Run Number (ASCII)
8	

HTTP PORT 80 STATUS	
9	Not Used
10	Not Used
11	Not Used
12	Number of Requests
13	Number of Responses
14	Number of Errors Received
15	Number of Errors Sent

7.3 Serial Port Status and Other Protocol Driver Status

The status data for each serial port and protocol driver is located during the configuration of the individual [PORT X] blocks. See the relevant serial protocol manual (i.e., MCM, DFCM, etc.) for details.

8 Example Configuration File : DFNTDFCM.CFG

The following is a view of the default configuration CFG file that is shipped on the unit from the factory. This file can easily form the basis for a solution by either downloading a copy off the web or by uploading the file from the unit and editing it using a text editor.

```
# DFNTDFCM.CFG
#
# This file contains the configuration for the DFNT/DF1 communication
# module.
#
# LOCATION      : Test Bench Example
# DATE          : 04/25/2003
# CONFIGURED BY : RAR
# MODIFIED      :
#
# This section is used to define the configuration for the Module level
# data.
#
[Module]
Module Name      : Test Example of 5202-DFNT-DFCM Communication Module
Local Domain Name : vcs.com
Maximum Register : 5000 #Maximum number of database registers
Error Status Pointer : 1000 #Start register for error/stat data
Password         : PASSWORD

# This section is used to define the configuration for the master device
# simulated on network port
#
[Client 0]
Error Status Pointer : 1020 #Start register for error/stat data (10 words)
Command Count        : 1    #Number of command to process (0-100)
Minimum Command Delay : 100 #Minimum number of msec's between commands
Command Error Pointer : 2000 #Modbus start register for Cmd Err Blk
Response Timeout     : 1000 #Response message timeout (0-65535 mSec)
Retry Count          : 3    #Response failure retry count

[Client 0 Commands]
#
# The file contains examples for a ControlLogix processor with the N7 file
# configured. This example uses SLC and PLC5 commands. Slot 0 indicates that
# the ControlLogix processor being addressed is in Slot 0 of the CLX rack
#
# 1 2 3 4 5 6 7 8 9 10 11 12
# DB Poll Swap Func File File Elm Sub
#Enab Addr Delay Count Code Node IP Address Slot Code Type # # Elm
START
1 0 0 10 0 192.168.0.103 0 502 N 7 0 0
1 10 0 10 0 192.168.0.103 0 501 N 7 10
1 10 0 10 0 192.168.0.103 0 509 N 7 20
#
# DB Poll Swap Func File Elm Sub
#Enab Addr Delay Count Code Node IP Address Slot Code # # Elm
1 20 0 10 0 192.168.0.103 0 101 7 30 -1
1 20 0 10 0 192.168.0.103 0 100 7 40 -1
END

[Client 1]
Error Status Pointer : 1030 #Start register for error/stat data (10 words)
Command Count        : 1    #Number of command to process (0-100)
Minimum Command Delay : 50 #Minimum number of msec's between commands
```

```
Command Error Pointer : 2100 #Modbus start register for Cmd Err Blk
```

```
Response Timeout : 1000 #Response message timeout (0-65535 mSec)
```

```
Retry Count : 3 #Response failure retry count
```

```
[Client 1 Commands]
```

```
# Slot of -1 is used to indicate that the device being addressed does not  
# require slot addressing (PLC and SLC5/05)
```

```
#          DB  Poll      Swap          Func File Elm Sub  
#Enab Addr Delay Count Code Node IP Address Slot Code # # Elm  
START  
1 50 0 10 0 192.168.0.101 -1 101 7 0 -1  
END
```

```
# This section is used to define the configuration for the DF1 pass-through  
# port on the Debug/Configuration port  
#
```

```
[Pass-Through Port]
```

```
Enabled : Y #Y=Use port, N=Do not use port  
Local Station ID : 1 #DF1 node address  
Protocol : 0 #0=Full-Duplex, 1=Half-Duplex  
Baud Rate : 19200 #Baud rate for port 110-115200  
Parity : 0 #0=None, 1=Odd, 2=Even, 3=Mark, 4=Space  
Data Bits : 8 #5, 6, 7 or 8  
Stop Bits : 1 #1 or 2  
RTS On : 0 #0-65536 mSec before message  
RTS Off : 0 #0-65536 mSec after message  
Use CTS Line : N #Use CTS modem control line (Y/N)  
Retry Count : 3 #Response failure retry count  
Request Timeout : 1000 #Request message timeout (0-65535 mSec)  
Busy Timeout : 500 #Port Busy timeout (0-65535 mSec)  
ACK Timeout : 100 #DLE-ACK timeout (0-65535 mSec)
```

```
# This section is used to define the configuration for the DF1 master device  
# simulated on Port 0.  
#
```

```
[Port 0 DF1]
```

```
Enabled : Y #Y=Use port, N=Do not use port  
Type : 0 #0=Master, 1=Slave  
Error Status Pointer : 1040 #Start register for error/stat data (10 words)  
Local Station ID : 0 #DF1 node address  
Protocol : 0 #0=Full-Duplex, 1=Half-Duplex  
Termination Type : 1 #0=BCC, 1=CRC  
Baud Rate : 19200 #Baud rate for port 110-115200  
Parity : 0 #0=None, 1=Odd, 2=Even, 3=Mark, 4=Space  
Data Bits : 8 #5, 6, 7 or 8  
Stop Bits : 1 #1 or 2  
Min Response Delay : 0 #0-65535 mSec before sending response msg  
RTS On : 0 #0-65536 mSec before message  
RTS Off : 0 #0-65536 mSec after message  
Use CTS Line : N #Use CTS modem control line (Y/N)  
  
ENQ Delay : 0 #0-65535 mSec before DLE-ENQ sent  
Command Count : 1 #Number of command to process  
Minimum Command Delay : 50 #Minimum number of msec's between commands  
Command Error Pointer : 1100 #Modbus start register for Cmd Err Blk  
Response Timeout : 1000 #Response message timeout (0-65535 mSec)  
Retry Count : 3 #Response failure retry count  
Error Delay Counter : 100 #0-65535 Command cycle count if error
```

```

Slave List Pointer      : 2000  #Start database location for slave list

First File             : 0      #First file number for SLC simulation
File Size              : 0      #Number of elements in each file
File Offset            : 0      #Database offset for first file element

```

[Port 0 Commands]

```

# The file contains examples for a SLC 5/03 processor.
#
START
#      1      2      3      4      5      6      7      8      9      10     11
#      Internal  Poll      Swap      Node Func File File  Elm  Sub
# Enable Address Interval Count Code  Address Code Type  #  # Elm
      1      1510      0      5      0      1      501  N   7   10
      1      1515      0      2      0      1      509  N   7    0
      1      1500      0     10      0      1      502  N   7    0
END

# This section is used to define e-mail reports to be sent from the module
# to a specified e-mail server/user account based on the value of selected
# user register/value combinations.  When the specified register value contains
# the value defined, the e-mail file will be sent from the module.

[E-MAIL]
#  DB  Trigger  Mail      TO
#  Reg  Value   Server IP  Name      E-Mail File Name
START
4000   1        192.168.0.61  user@aol.com  stat
4000   2        192.168.0.61  user@aol.com  commands
4000   3        192.168.0.61  user@aol.com  errlist
4000   4        192.168.0.61  user@aol.com  emailcfg
4000   5        192.168.0.61  user@aol.com  example.rpt
END

```

Service and Warranty Statement

Module Service and Repair

The ProLinx module is an electronic product, designed and manufactured to function under somewhat adverse conditions. As with any product, through age, misapplication, or any one of many possible problems, the card may require repair.

When purchased and registered, the module has a one year parts and labor warranty according to the limits specified in the warranty. Replacement and/or returns should be directed to the distributor from whom the product was purchased. If you need to return the card for repair, it is first necessary to obtain an RMA number from the factory. Please call the factory for this number and display the number prominently on the outside of the shipping carton used to return the card.

General Warranty Policy

ProSoft Technology, Inc. (Hereinafter referred to as PTI) warrants that the Product shall conform to and perform in accordance with published technical specifications and the accompanying written materials, and shall be free of defects in materials and workmanship, for the period of time herein indicated, such warranty period commencing upon receipt of the Product.

This warranty is limited to the repair and/or replacement, at PTI's election, of defective or non-conforming Product, and PTI shall not be responsible for the failure of the Product to perform specified functions, or any other non-conformance caused by or attributable to: (a) any misapplication or misuse of the Product; (b) failure of Customer to adhere to any of PTI's specifications or instructions; (c) neglect of, abuse of, or accident to, the Product; or (d) any associated or complementary equipment or software not furnished by PTI.

Limited warranty service may be obtained by delivering the Product to PTI and providing proof of purchase or receipt date. Customer agrees to insure the Product or assume the risk of loss or damage in transit, to prepay shipping charges to PTI, and to use the original shipping container or equivalent. Contact PTI Customer Service for further information (See cover of User Manual).

Limitation of Liability

EXCEPT AS EXPRESSLY PROVIDED HEREIN, PTI MAKES NO WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, WITH RESPECT TO ANY EQUIPMENT, PARTS OR SERVICES PROVIDED PURSUANT TO THIS AGREEMENT, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. NEITHER PROSOFT OR ITS DEALER SHALL BE LIABLE FOR ANY OTHER DAMAGES, INCLUDING BUT NOT LIMITED TO DIRECT, INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES, WHETHER IN AN ACTION IN CONTRACT OR TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY), SUCH AS, BUT NOT LIMITED TO, LOSS OF ANTICIPATED PROFITS OR BENEFITS RESULTING FROM, OR ARISING OUT OF, OR IN CONNECTION WITH THE USE OR FURNISHING OF EQUIPMENT, PARTS OR SERVICES HEREUNDER OR THE PERFORMANCE, USE OR INABILITY TO USE THE SAME, EVEN IF PTI OR ITS DEALER'S TOTAL LIABILITY EXCEEDS THE PRICE PAID FOR THE PRODUCT.

Where directed by State Law, some of the above exclusions or limitations may not be applicable in some states. This warranty provides specific legal rights; other rights that vary from state to state may also exist. This warranty shall not be applicable to the extent that any provisions of this warranty is prohibited by any Federal, State or Municipal Law that cannot be preempted.

Hardware Product Warranty Details

Warranty Period : PTI warrants hardware product for a period of one (1) year.

Warranty Procedure : Upon return of the hardware Product PTI will, at its option, repair or replace Product at no additional charge, freight prepaid, except as set forth below. Repair parts and replacement Product will be furnished on an exchange basis and will be either reconditioned or new. All replaced Product and parts become the property of PTI. If PTI determines that the Product is not under warranty, it will, at the Customer's option, repair the Product using current PTI standard rates for parts and labor, and return the Product freight collect.