PMD 3100/3600 Series

user's manual

PMD 3100/3600 SERIES

USER'S MANUAL

WARNING

In the application of UTICOR Technology, LP programmable control devices, you should consider them components. Therefore, provisions other than the programmable control device must be taken to protect personnel in the event of a programmable control device malfunction. Programmable control devices should not be used as stand-alone protection in any application. Unless proper safeguards are used, unwanted start-ups could result in equipment damage or personal injury. If programmable controllers are used with operator interface and like devices, this hazard should be of primary importance. The operator should be made aware of this hazard and appropriate precautions should be taken.

In addition, consideration should be given to the use of an emergency stop function that is independent of the programmable controller.

The diagrams and examples in this user's manual are included for illustrative purposes only. UTICOR Technology, LP cannot assume responsibility or liability for actual use based on the diagrams and examples.

CAUTION

Static messages that remain on the display for extended periods of time may cause uneven illumination of the dot matrix grid. This is caused by inherent properties of all vacuum fluorescent display technology. To avoid unevenness of display characters, power down unit when not in use. Do not leave the same message on the display for indefinite periods.

Brightness damage may be partially restored to normal by performing the "TEST FUNCTION — DISPLAY" option on the PMD.

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1 Introduction

Congratulations on your decision to enhance your intra-plant communication by incorporating a UTICOR Programmable Message Display into your system. With the help of this manual, you will soon be able to implement the diverse capabilities of the PMD. What follows is a brief description of each unit in the PMD 3100 and 3600 Series. The "Getting Started" and programming sections in this manual explain how to communicate with your unit and utilize the software by catering to your programming preference: online or offline. The additional sections provide reference information and include a glossary and index for quick help. Of course, if you still encounter difficulty, UTICOR backs up every one of its products with superior customer service: 319-359-7501.

Introduction

PMDs are designed to give you fast, accurate information when you need it most. They give you maximum flexibility with minimum complexity. The primary requirement for application of the PMD is to understand the system it will be incorporated into and the needs of your personnel. Because the PMD is so versatile, it is used in a wide variety of applications. And since machinery, processes, and electronic equipment vary from application to application, there are numerous ways to enter information into and extract information from your 3100/3600 Series unit. With appropriate planning, you can always be aware of the current status of your process and react immediately to unwanted situations.

UTICOR PMD products provide information from your controlled process or automated operation. Simple ON/OFF signals from your programmable controller enable a PMD to translate current conditions into plain English by selecting a pre-programmed message. This message information may be displayed on the PMD's alpha-numeric display, sent to an online printer, stored in the PMD's data log, and sent to and displayed on PMD slaves.

PMDs are programmed with any ASCII terminal or personal computer with an RS-232C interface. PMD Programming Software (Part Number 10F50) available from UTICOR lets you program online, offline, or while residing in a network. All programming is menu- and prompt-driven so that creating messages and setting unit parameters is relatively simple.

PMDs are easy to use and have many standard features that let you set up your intra-plant communication system in a way that best accommodates your applications. They can be as simple or as complex as your operation.

1 Introduction

This manual covers several PMD products: PMD 3100, PMD 3600, PMD 3150, PMD 3650, PMD 3160, PMD 3660, PMD 3170, PMD 3670, PMD 3175, PMD 3675, PMD 3180, and PMD 3680.

PMD 3100/3600 Series Features:

Messages can...

*scroll
*print
*blink words or characters
*display time, date and variable data
*display punctuation as well as text
*be triggered by time of day
*chain messages (up to 115)
*display on masters
*display on virtually unlimited # of slaves
*log with time/date stamp
*display varying character heights
*display 8 international character sets
*cause an alarm to sound

PMD 3100

The PMD 3100 is a large master display with red LEDs, available in three heights and three widths with a total of eight different sizes. The character heights can be 2", 4", 6", 8" and 8" narrow. Messages are triggered via the 16-bit *parallel port*. The PMD 3100 uses suspended mounting, either using the eyebolts on top or mounting kits that allow adjustable-angled viewing.

PMD 3600

The PMD 3600 is a large master display with tricolor (red, green, and yellow) LEDs, available in two heights and two widths with a total of four different sizes. The character heights can be 2", 4", 6", 8" and 8" narrow. Messages are triggered via the 16-bit *parallel port*. The PMD 3600 uses suspended mounting, either using the eyebolts on top or mounting kits that allow adjustable-angled viewing.

PMD 3150/3650

The PMD 3150/3650 is essentially a PMD 3100 or 3600 that directly interfaces to an Allen-Bradley PLC2, PCL3 or PLC5 through Remote I/O, Block Transfer or Data Highway/Plus. Each of these modes operates independently from the other and the 3150/3650 can be configured to communicate using any one of them. The PMD 3X50 has all of the PMD 3100/3600 features, but receives communication through twinaxial cable ("blue hose").

The PMD 3100/3600 *Parallel Port*, the associated *Message Control Terminals*, and the *Power In/Power Out Terminals* have been removed and replaced by the *PLC interface connector* located on the interface board of the PMD 3150/3650. The same is true for the 3160/3660, 3170/3670, 3175/3675, and 3180/3680 units. Please be advised that all of the direct PLC interface units require you to punch a hole to accommodate the wiring. Please be careful of metal filings.

1 Introduction

PMD 3160/3660

The PMD 3160/3660 is also very similar to the PMD 3100 or 3600 and contains an interface to Texas Instruments Series 545 CPU (and the 560 and 565 CPUs used in conjunction with the TI RCC module) which have the RS-485 remote I/O module.

The PMD 3160/3660 will appear as an RBC (Remote Base Controller) to the TI PLC. The PMD 3X60 can also listen to an existing RBC and use the information from it.

PMD 3170/3670

The PMD 3170/3670 is essentially a PMD 3100 or 3600 with an optional Modicon interface board. The interface board lets the unit directly interface to a Modicon S908 RIO processor. The interfacing is accomplished by the PMD 3X70 emulating a D908 module in the remote I/O communication system.

PMD 3175/3675

The PMD 3175/3675 is a PMD 3100 or 3600 that interfaces to Modicon MODBUS PLUS local area network. The PMD is a node on the network with its own network address. The unit monitors PLC holding registers for message control and data set information.

PMD 3180/3680

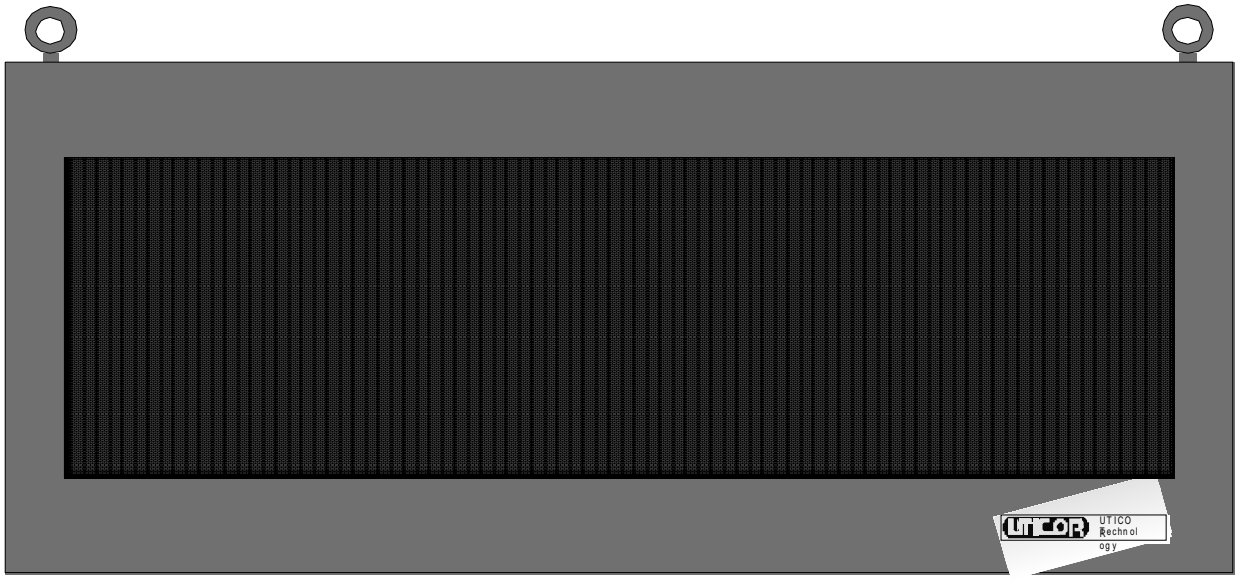
The PMD 3180/3680 has all of the PMD 3100 or 3600 capabilities, but the 3X80 contains support for a Genius Network Adapter ("GENA") board which allows the PMD to be configured as a node on the Genius I/O system. The 3X80 can be configured as an I/O block on a Genius I/O system and will receive data from a bus interface module. A bus interface module is typically a PLC with a Genius bus controller module or a PCIM card installed in a personal computer. The PMD 3180/3680 will exist on the Genius I/O network as an I/O block broadcasting its inputs to the bus and reading the outputs sent to it by the bus controller.

Conclusion

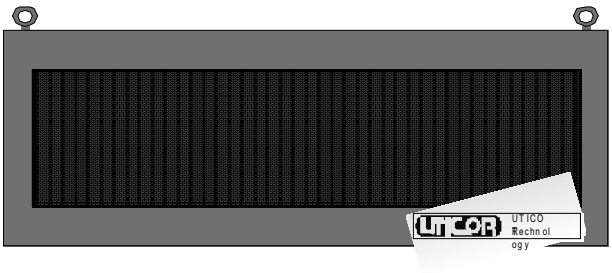
Get to know your 3100/3600 unit by browsing through this manual. Then program your unit; experiment with your messages to obtain the most effective method for displaying them. View your messages individually or in various sequences when you are programming so that unforeseen effects can be easily detected and corrected. Combine this manual information with your knowledge of your needs, your other equipment, and your imagination to make your control network successful.

1 Introduction

PMD 3100/3600 Series Front View



2W4H

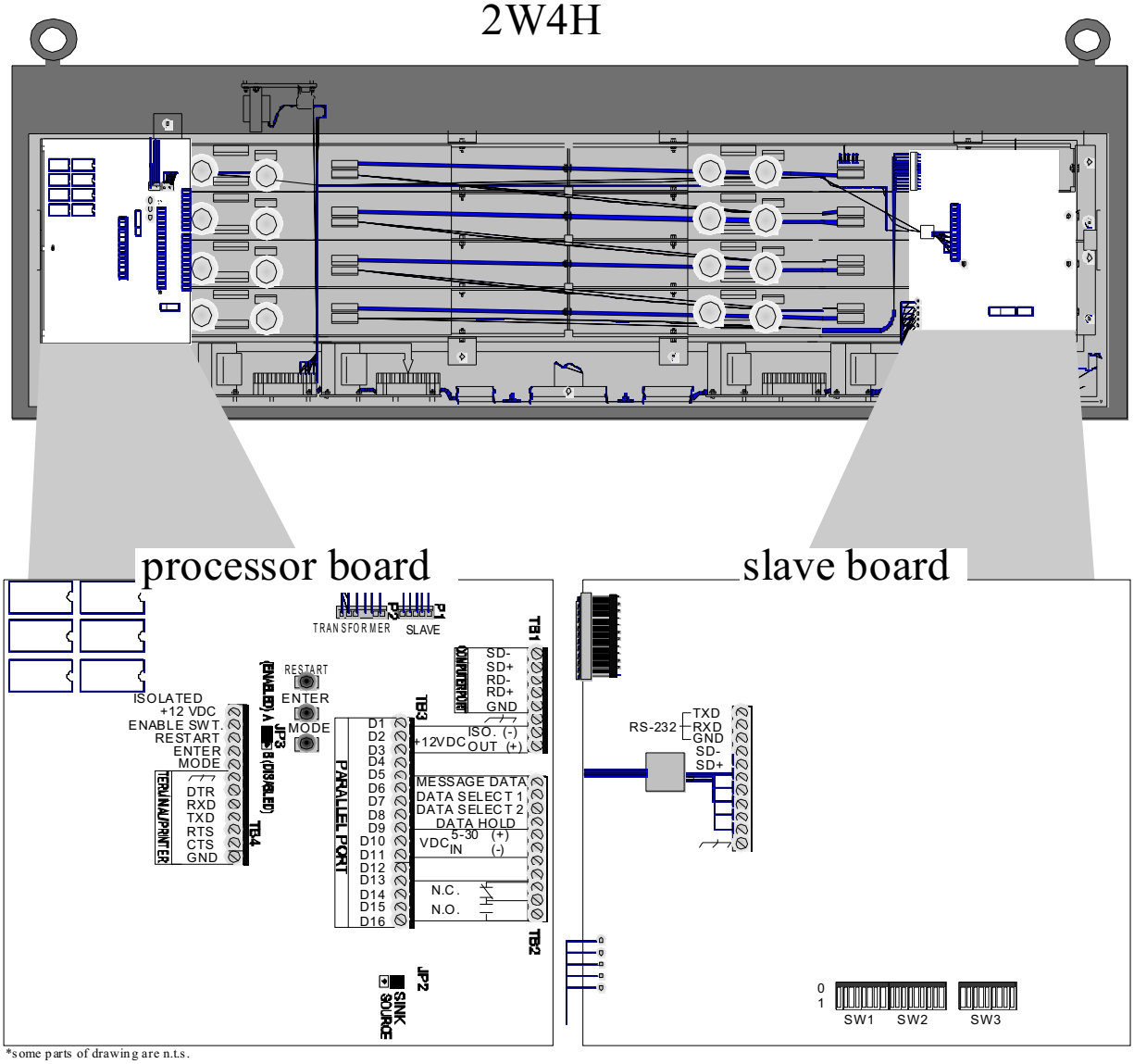


1W2H

1 Introduction

PMD 3100/3600 Back InsideView

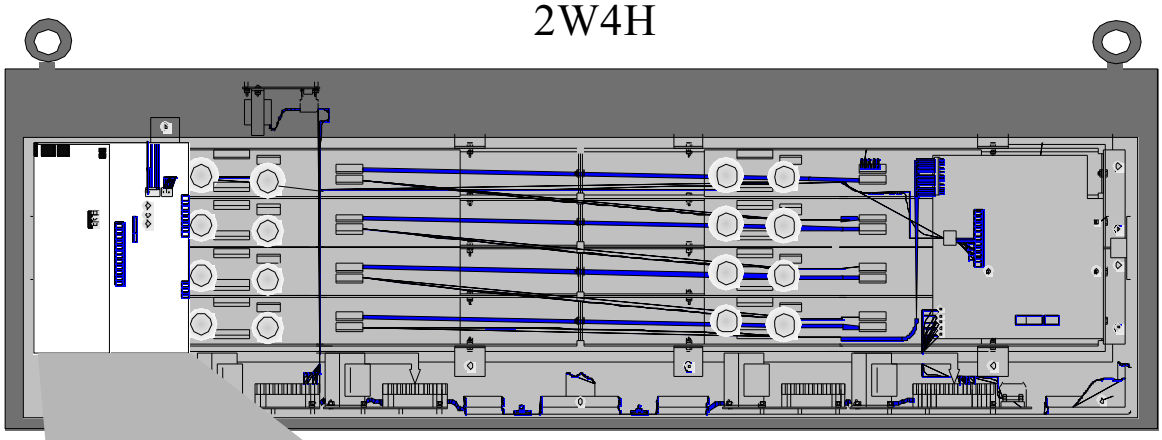
2W4H



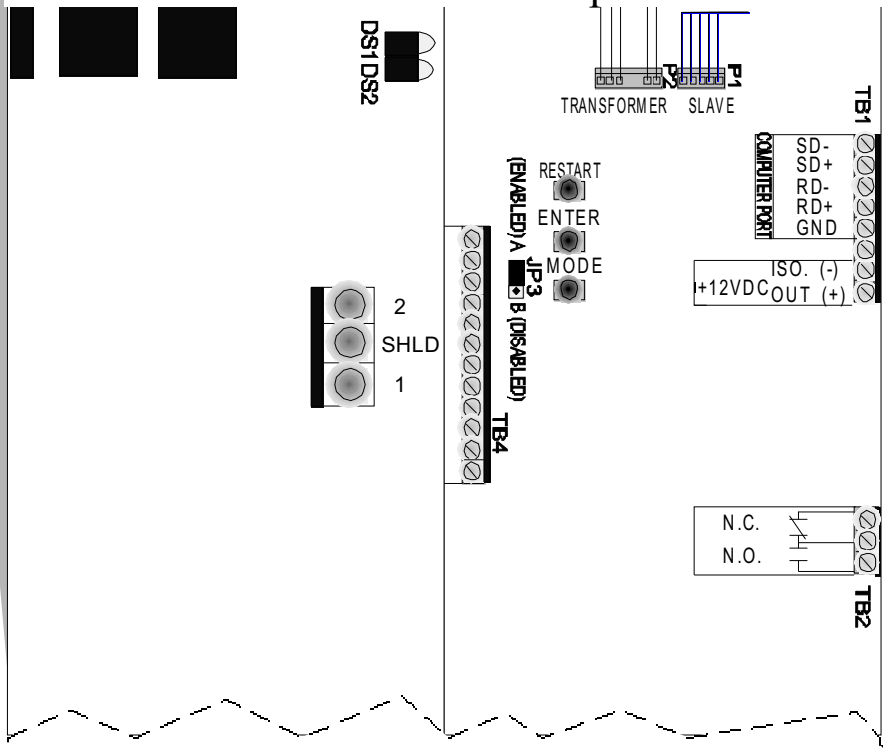
*some parts of drawing are n.t.s.

1 Introduction

Direct PLC Interface Unit's Back InsideView
(Allen-Bradley)
2W4H



direct PLC interface board & processor board



*some parts of drawing are n.t.s.

2 Getting Started

Manual Conventions

•A **bold** word is a "command" or the action required to operate your PMD or software.

•A gray section indicates that the information or reference enclosed within it is unique to the various 3100/3600 Series interface units.

These conventions, in addition to the strict division of offline and online programming, are intended to aid you in implementing the directions in this manual more quickly for your particular use.

Hardware Requirements

•IBM or compatible computer
•450K RAM (minimum)
•Hard disk space: 10F50 will use 1 Megabyte
•1 Megabyte of EMS or XMS memory is recommended but not necessary.
•One RS-232 serial port (COM1, COM2, COM3 or COM4)
•DOS 3.3 or later
•The CONFIG.SYS file in the computer's root directory should have the following two statements:

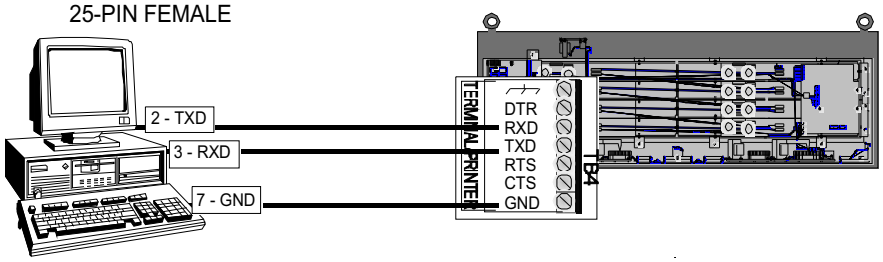
FILES=20 (or more)
BUFFERS=20 (or more)

Software Requirements

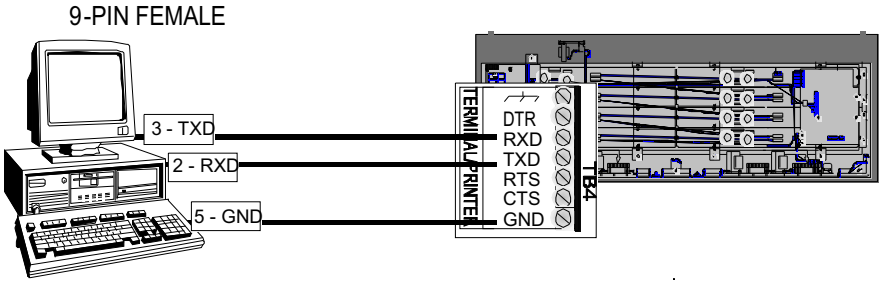
•UTICOR programming software (Part Number 10F50)
***Note**: Any terminal emulation software can also be used for online programming.*

Interconnect Cable

•An RS-232 interconnect cable is required for proper communication. This cable will connect to the COM1, COM2, COM3 or COM4 port of the computer and the *terminal/printer port* of the 3100 unit. UTICOR makes a universal programming cable (Part Number 43962) that accommodates both 25-pin and 9-pin connectors.



2 Getting Started



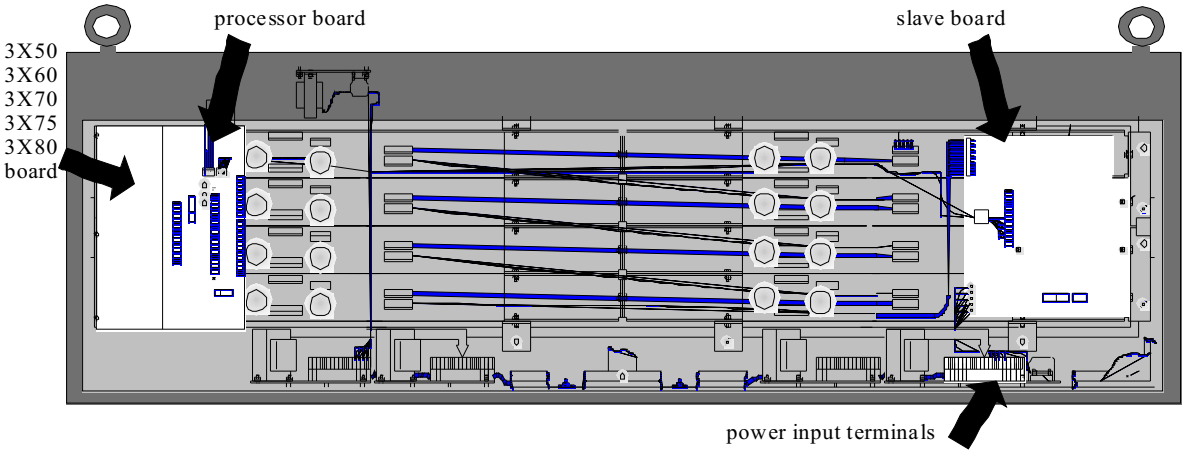
Note: *Additional wires or jumpers in the cable may cause communication problems between the computer and the 3100/3600 Series unit.*

Hardware Operation and Connection

The PMD 3X00 has all wiring termination points and adjustment elements located inside. The **processor board** is the master controller and drives the slave board. Its hardware includes the *terminal/printer port, parallel port, message control terminals, power supply in/out terminals, relay output terminals, computer port*, the *source/sink jumper*, the *remote push button station, enable/disable jumper*, and the push buttons.

The **direct PLC interface board** provides communication between your 3X00 unit and your PLC. The only components you will need to utilize are the connector or terminal block, depending on your unit's board, and the LED indicator lights.

The **slave board** contains the dip switches and the RS-422A serial/repeater port. The transformer/connector sub-plate with filter and fuse, which houses the power input terminals, is located along the bottom of the 3X00 unit.

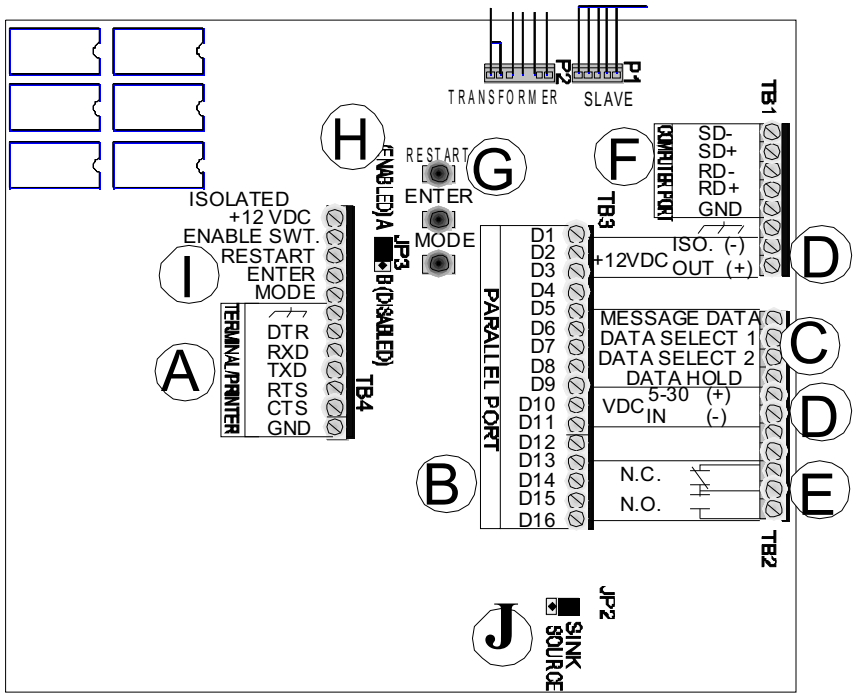


2 Getting Started

What follows is a brief description of every component and connector that you need to become familiar with on each board.

WARNING! PLEASE BE SURE TO REMOVE POWER FROM THE UNIT BEFORE TOUCHING COMPONENTS!

Processor Board



*some parts of drawing are n.t.s.

A. *Terminal/Printer Port* is a program development, documentation, and storage port which connects to a program terminal, printer, or personal computer (RS-232 communication).

B. *Parallel Port* is a 16-input port that is used in conjunction with a PLC discrete output module through which a collective value (number) is interpreted as either Binary or BCD, translated into message numbers and data information, and then entered into the 3100 Series unit when it is in the DISPLAY MODE of operation.

C. *Message Control Terminals* must be used to operate the *Parallel Port*. These terminals interpret and accept or reject two different types of inputs found on the *Parallel Port*: message numbers or variable data. The source/sink, inverted/non-inverted and BCD/Binary settings of the *Parallel Port* also determine the configuration of these terminals.

2 Getting Started

D. *Power Supply In/Out — Power In* terminals are used to provide the 3X00 Series unit with electrical references to the signals provided by the PLC output module. *Power Out* terminals are available to provide power to PLC output modules when an external power supply must be used. The output supplies 12 VDC at 350 mA.

E. *Relay Output Terminals* are connected to an internal Form C relay which is controlled by the message currently triggered. These terminals can be interfaced to an external device for a message-selected or timer-activated alarm.

F. *Computer Port* uses RS-422 communication for remotely interfacing the PMD to a controlling computer which accepts UTICOR or ASCII protocol (main frame, mini, personal, or PLC ASCII interface unit). Computers with RS-232C ports can be adapted to RS-422 operation by using the Isolated Bidirectional Adapter, Part Number 76535.

G. *Push buttons* allow you to select different operating modes and perform some parameter-setting functions. Manipulating the push buttons is described later in this section.

H. *Enable/Disable* is a jumper that allows you to enable or disable manual operation of the push buttons for safety purposes.

I. *Remote push button* is used to activate the switch inputs and provide convenient connection for devices that are used on the terminal/printer port when your PMD is inaccessible.

J. *Source/sink jumper* allows the parallel inputs to be either source or sink. Your 3100 unit is sent from the factory set for sink.

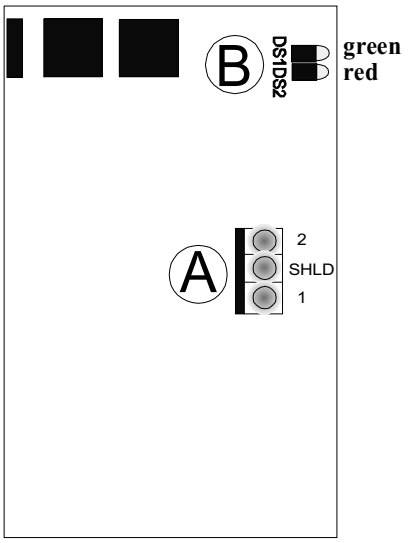
2 Getting Started

PMD 3X50 Direct PLC Interface Board

A. *Terminal block* provides easy communication between the 3X50 and your Allen-Bradley PLC.

B. *LEDs* —The green LED indicates when the board is transmitting data between the PMD and the PLC. The red LED flashes on when you press RESTART, but remains off during normal operation.

Note: Wiring changes are necessary when utilizing Data Highway/Plus. Please refer to ***SECTION 8: PLC INTERFACING, PART A: 3X50 A-B INTERFACE****.*

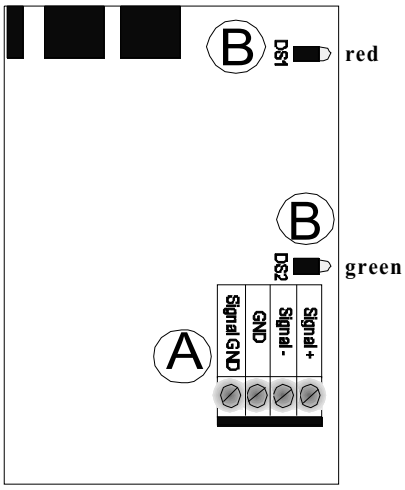


*some parts of drawing are n.t.s.

PMD 3X60 Direct PLC Interface Board

A. *Terminal block* provides easy communication between the PMD 3X60 and your Siemens/Texas Instruments PLC.

B. *LEDs* — The green LED indicates when the board is transmitting data between the PMD and the PLC. The red LED flashes on when you press RESTART, but remains off during normal operation.



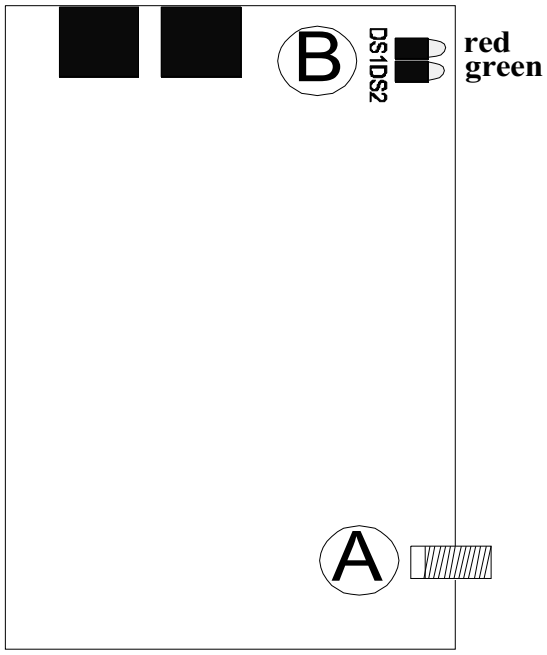
*some parts of drawing are n.t.s.

2 Getting Started

PMD 3X70 Direct PLC Interface Board

A. *Female BNC coaxial connector* provides easy communication between the PMD 3X70 and your Modicon PLC.

B. *LEDs* — The green LED indicates when the board is transmitting data between the PMD and the PLC. The red LED flashes on when you press RESTART, but remains off during normal operation.



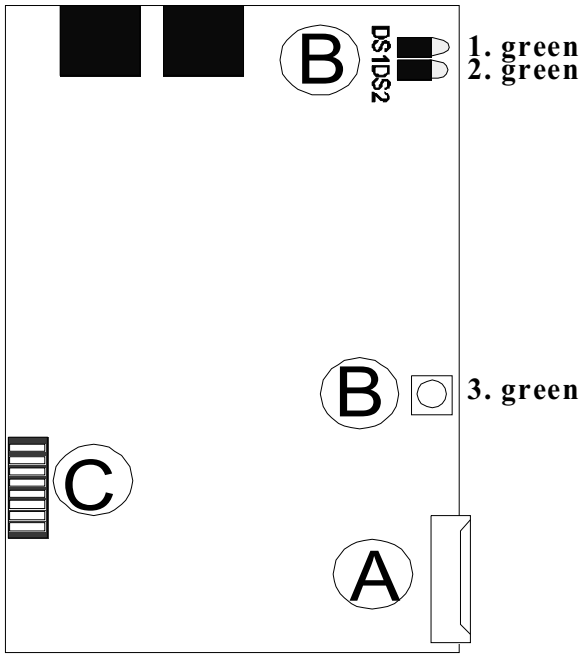
*some parts of drawing are n.t.s.

PMD 3X75 Direct PLC Interface Board

A. *9-Pin, "D" style connector* provides easy communication between the PMD 3X75 and your Modicon MODBUS PLUS port.

B. *LEDs* - 1. This green LED is the transmit enable indicator. 2. This green LED is the receive data indicator. 3. This green LED is the network status indicator and displays node status by flashing repetitive patterns, as described in **PART D** of **SECTION 8 - PLC INTERFACING.**

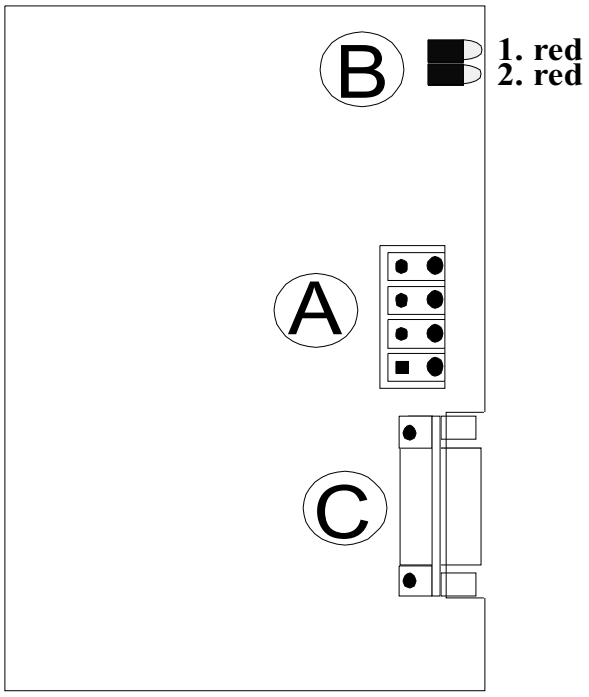
C. *Dip switches* set your node address, as described in more detail in **PART D** of **SECTION 8 - PLC INTERFACING.**



*some parts of drawing are n.t.s.

2 Getting Started

PMD 3X80 Direct PLC Interface Board



*some parts of drawing are n.t.s.

A. *Right-angle, four-position, removable terminal block* provides easy communication between the PMD 3X80 and your GE Genius I/O port.

B. *LEDs* —The two red LEDs (labeled **B**) indicate the real time operation of this GENA board. During the initial power up, both LEDs will be off. After the GENA initializes the MIT2 chip, the board will check for a serial bus address conflict. If such conflict exists, the LEDs will blink in unison and set the Serial Bus Address Conflict bit in the Communication Errors byte. If the test is successful, however, the GENA board will start transmitting.

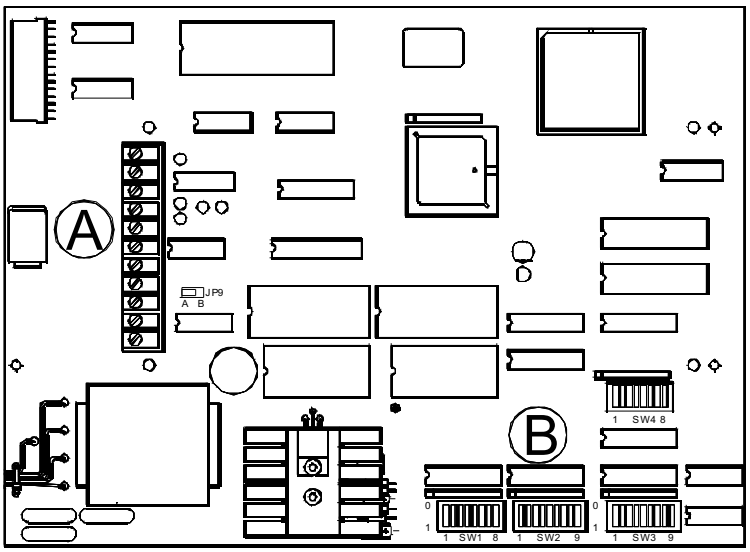
1. This red LED is the Communication OK LED. When it is on, it indicates that power is available, the controller's communication hardware is functional, and it can send and receive. If it is off or flashing, it is indicating that an error has been detected in the communication hardware or access to the Genius serial bus.

2. This red LED is the GENA OK LED. When it is on, it indicates that power is available to the GENA and the on-board self-diagnostics test was passed. If it is off, it is indicating that the board has failed or the improper address assignment of /RST input line is low.

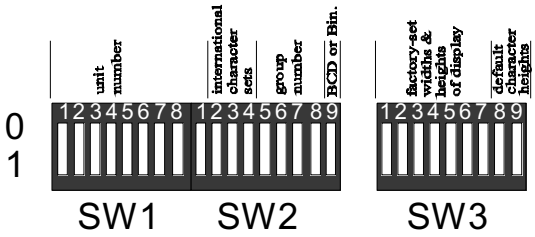
C. *GENA terminal connector* is for use with the hand-held monitor.

2 Getting Started

Slave Board



A. *RS-422A serial/repeater port* is the port that connects the slave board to the processor board and accommodates the interfacing. It is not to be used for programming!



B. Dip switches — select 0 by pushing the **0** end of the switch in; select 1 by pushing the **1** end of the switch in. Switch 1 and positions 1 and 5-8 of Switch 2 define the unit address, or the group and unit number that the slave will respond to. These are factory set and should remain in the set positions to avoid complications. Positions 2-4 of Switch 2 define the international character sets as defined below.

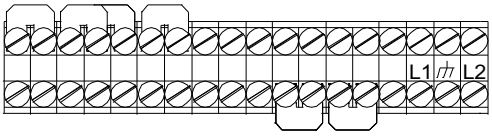
CHARACTER SET	SW2-2	SW2-3	SW2-4
United States	0	0	0
Cyrillic	1	0	0
French	0	1	0
German	1	1	0
English	0	0	1
Danish	1	0	1
Swedish	0	1	1
Japanese Kana	1	1	1

2 Getting Started

Positions 1-7 of Switch 3 indicate to the processor board the width and height of the particular display**. These settings are also pre-set at the factory and should never be changed.** Positions 8 and 9 of Switch 3 set the **default** character height for displayed messages. The default character height determines what size message characters will be when the character height is not indicated within the message. Character height default settings are shown below. Please refer to **APPENDIX B - DEFAULT SETTINGS** for all of the dip switch default settings for your unit.

CHARACTER HEIGHT	POSITION 8	POSITION 9
two-inch	1	1
four-inch	0	1
six-inch	1	0
eight-inch	0	0

Power Input Terminal Block



Use the last three positions of this terminal block to connect an external power source to the unit. Always connect the ground terminal to the safety ground.

WARNING! GND terminals on communication ports are signal grounds and should never be attached to this safety ground.

Operating the Push Buttons

The 3100/3600 unit's three push buttons on the processor board operate the unit and provide some parameter setting functions.

Restart

RESTART discontinues your current operation and starts the push button mode sequence again, letting you change modes of operation. After you press RESTART, the unit self-tests and then enters the DISPLAY MODE. Press MODE to change to a different mode of operation.

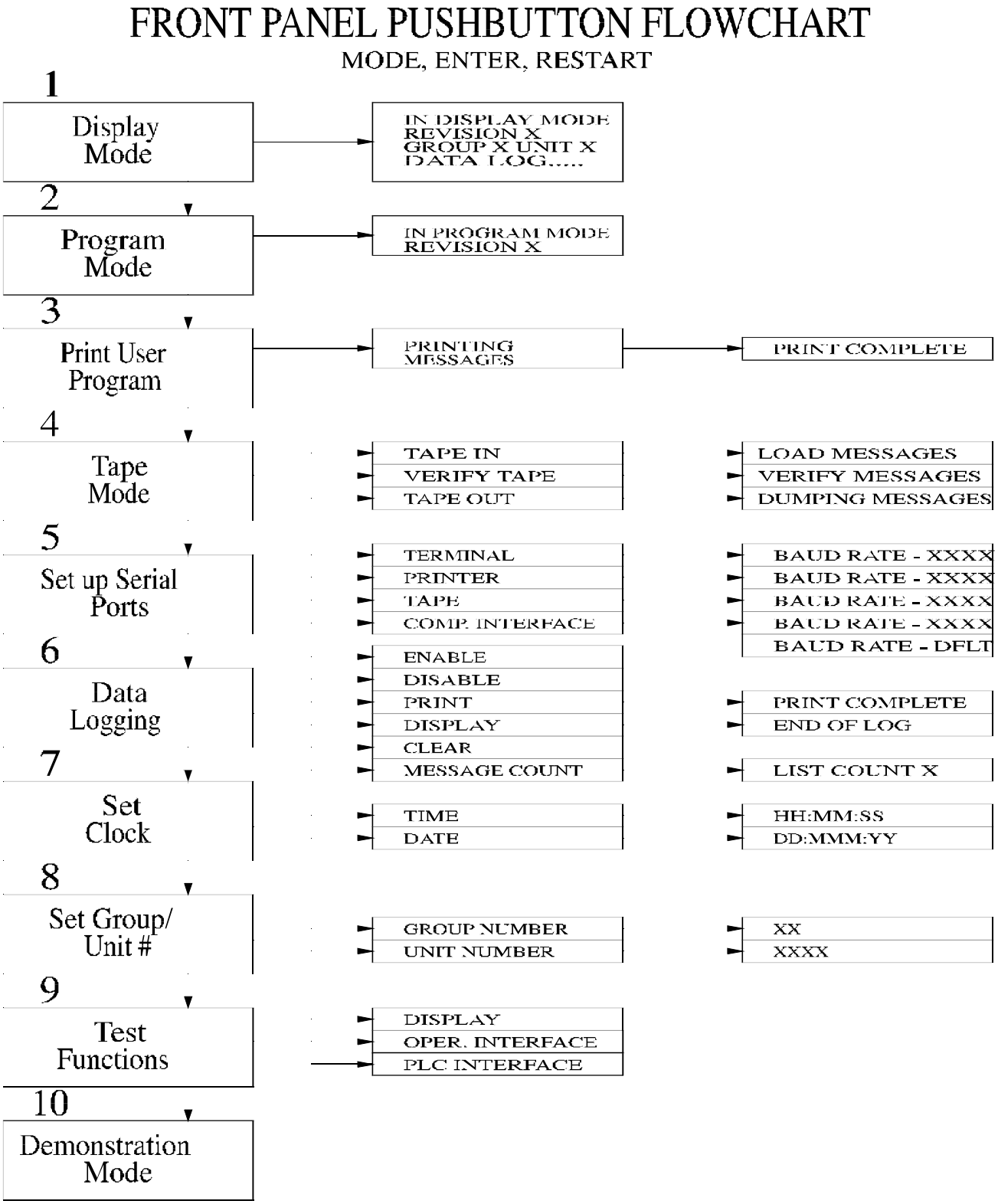
Enter

Use ENTER to select your desired mode of operation, a baud rate setting, real-time clock settings etc.

Mode

MODE toggles the unit to the various modes of operation. When toggling the MODE push button, select ENTER when your desired mode or setting appears on line 1 or line 2 of the display.

2 Getting Started



2 Getting Started

Push Button Mode Definitions

The "Push Button Flow Chart" on the previous page illustrates all of the modes. Brief descriptions of each follow. You might find it easier to perform these operations through the online programming section, especially if you have a two-line display and cannot see the four-line prompts that appear using the push buttons.

1. Display

This is the normal operating mode which means your unit is ready to accept communication through the *Parallel Input Port* and the *RS-422A Computer Port* or the *PLC Interface Port*.

2. Program

This is used to program the unit with a dumb ASCII terminal or computer with 10F50 in Terminal Emulator mode.

3. Print User Program

This prints out the programmed memory of the unit.

4. Tape Mode

This allows message files to be uploaded from your computer to the unit or downloaded from the unit to your computer and verified.

5. Set up Serial Ports

This sets the baud rate for the RS-232 *Terminal/Printer Port* (Terminal, Printer or Tape) and the RS-422A *Computer Port* (Computer Interface). Baud rate settings for these functions are 300, 600, 1200, 2400, 4800 and 9600. When the baud rate for the PROGRAM MODE is set externally, the unit is set for eight data bits, no parity and one stop bit.

6. Data Logging

This turns the internal data logging function on and off, prints, displays, or clears data log memory. It also displays message count. The contents of the data log are displayed starting with the last entry added to the data log.

7. Set Clock

This sets the clock's time and date. Time (shown in 24-hour format) and date both have three fields. The current field to set will blink. **Press** MODE to change the setting; **press** ENTER to select the setting shown.

8. Set Group/Unit #

This sets group number (0-15) and unit number (0-4095) for the *computer interface port*. Enter your selection digit-by-digit by pressing MODE and ENTER. The PMD does not accept numbers larger than the maximum allowed.

WARNING! Do NOT use the same group/unit address for PMDs that are connected serially (using bidirectional communication through the computer port). Computer interface communication can cause internal damage to displays that are set to the same group/unit address.

2 Getting Started

9. Test Functions

This provides two test functions:
1. *Parallel Port* displays the current state of the 16-line *parallel input terminal block*, the four-line *message control terminals*, and the *relay output terminals.* An example of what can be displayed is on the previous flow chart. ENTER toggles the *relay output terminals* on and off. (When you press RESTART, they turn off.)

2. *Display* tests the dots in the matrix of each character location of the display. It will also put slave displays into the display test mode.

For direct PLC interface units, the test functions test the PLC port and dot matrix.

UTICOR Software 10F50

After you have become familiar with your unit's hardware and have wired it to power, you are ready to start developing messages! The following two sections are brief descriptions on how to get started with UTICOR software for both online and offline users. Please refer to the programming sections, **"ONLINE PROGRAMMING"** or **"OFFLINE PROGRAMMING"** to proceed with your method of programming.

Getting Started with Online Programming

1. **Connect** your RS-232 cable to the serial port (COM 1, COM 2, COM 3 or COM 4) and to the *terminal/printer* port on the PMD.

2. **Install** 10F50 to your hard disk.

3. **Select** the drive and path where the 10F50 has been installed.

4. For color monitor, **type**: PMD
   For monochrome monitor, **type**: PMD- MON
   For LCD monitor, **type**: PMD- LCD
   Type PMDP instead of PMD if using a PMD 3150 or 3650 with pass-through programming.

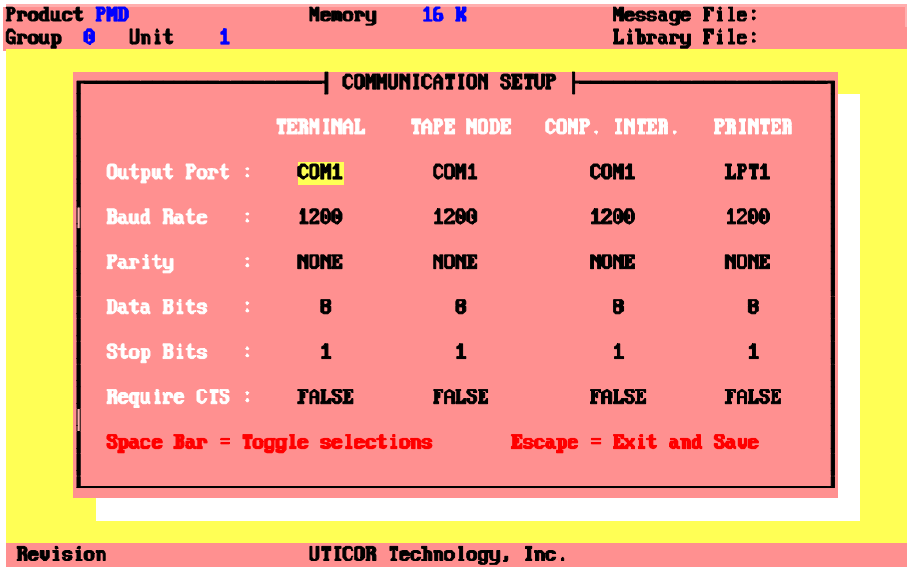
5. **Select** your UTICOR display by selecting **Product Selection** from the **MAIN MENU: PMD 300**. (This includes the PMD 3100 and 3600 Series).

6. **Select** a memory option: **16K, 32K, 64K; 128K**.

7. **Select** your interface: **Standard, Allen-Bradley, Texas Instruments, Modicon, Modbus Plus, GE Genius I/O**.

8. **Select Communication Setup** from the **MAIN MENU.**

2 Getting Started



9. **Select** the output port and baud rate for the terminal/computer. This baud rate MUST match the baud rate setting of the PMD. All PMDs shipped from the factory are set to 1200 baud. You can change the terminal mode baud rate of the PMD by **selecting SETUP SERIAL PORTS** on it and using the MODE and ENTER push buttons.

10. **Select**: **Parity = none; Data bits = 8; Stop bits =1.**

11. The **CTS** (Clear to Send) option is not required by UTICOR but if you want to use handshaking, toggle the option to **TRUE**.

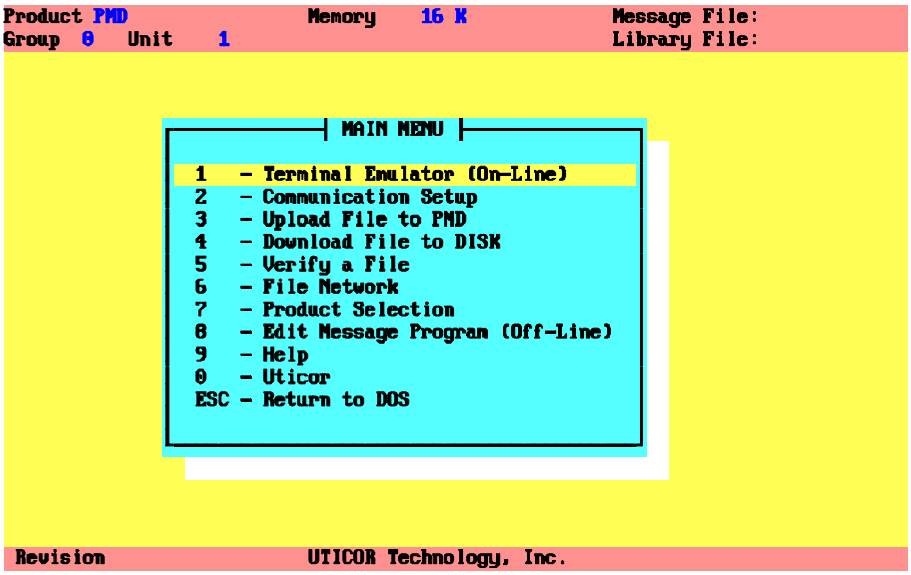
12. **Select** Esc to exit **COMMUNICATION SETUP** and save changes.

13. **Put** the 3100/3600 Series unit into the PROGRAM MODE by using the MODE and ENTER buttons.

14. **Select Terminal Emulator** from the **MAIN MENU** on the computer.

Note: *All changes are stored in the PMD **only**; nothing is stored in the computer. Online programming puts your computer in a dumb ASCII terminal mode.*

2 Getting Started



17. **Press** Enter on the computer, then **H** to list the PMD's **COMMANDS**.

COMMANDS ARE:

A	ADD A MESSAGE
C	COPY MESSAGES
D	DELETE MESSAGES
E	EDIT A MESSAGE
F	FIND A STRING
H	LIST VALID COMMANDS
I	INITIALIZE PARAMETERS TO DEFAULTS AND CLEAR ALL MESSAGES
L	LIST MESSAGES
N	DISPLAY NUMBER OF FREE BYTES
S	SET UP PARAMETERS
V	VIEW MESSAGES
<CR>	LIST NEXT MESSAGE
ESC	ABORT COMMAND

You should now be communicating with your unit. If communication has not been established, check your cable connections, COM port on the computer, and verify that the baud rate setting on the computer (10F50) matches that of the PMD. Now go to **SECTION 3 - ONLINE PROGRAMMING** to proceed.

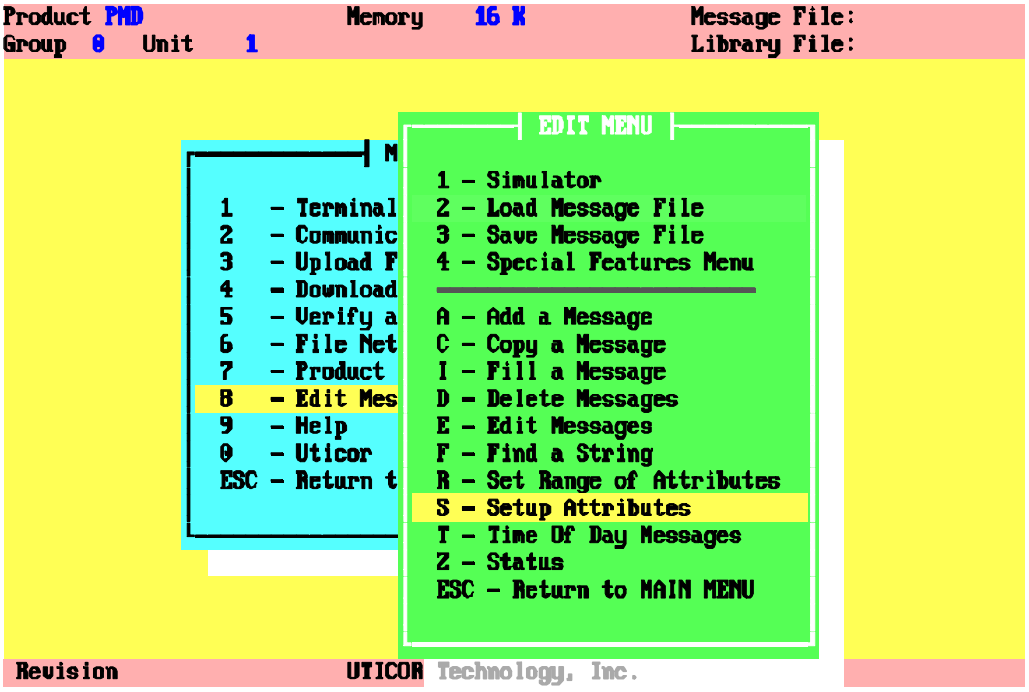
2 Getting Started

Getting Started with Offline Programming

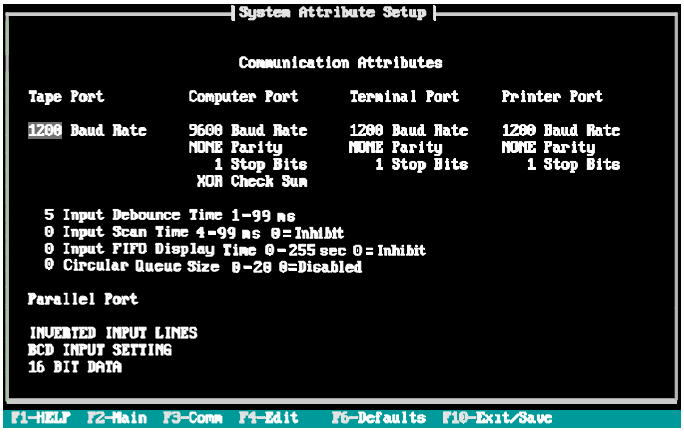
1. Follow steps 2-12 in the previous **Getting Started with Online Programming** section.

2. After you **select** Esc, you will be returned to the **MAIN MENU** screen.

3. **Select Edit Message Program** and then **Setup Attributes**.



4. **Press F3 - Comm** and match the tape and terminal port baud rate settings to those that you set in step 9.



CAUTION: Baud rates are stored with the message file.

5. **Press** F10 to save the changes and exit. The **Edit Menu** will be returned to your screen and you are ready to start programming offline. Now proceed to **SECTION 4 - OFFLINE PROGRAMMING.**

3 Online Programming

In this section you will learn how to use each option on the MAIN >COMMAND menu, the key to programming online. The **ONLINE PROGRAMMING** section is divided into three parts: **A. DEVELOPING A MESSAGE FILE; B. MESSAGE ATTRIBUTES; and C. WORKING WITH MESSAGE FILES.** Part **A** takes you through the basics of online programming and gives you the opportunity to get hands-on familiarity with the product even as you begin to develop a message file. Part **B** is an extension of Part **A**, and it helps you assign message attributes and add versatility to the message files. Part **C** takes you through ways to use the message files you have developed.

As you have already been introduced to some of the options on the MAIN MENU (Communication Setup, Product Selection), Parts **A** and **B** guide you through Terminal Emulator and part **C** explains Upload File to PMD, Download File to DISK, Verify a File, File Network. (Edit Message Program is mostly for offline programming.)

To continue from the **GETTING STARTED** section, you have selected Terminal Emulator from the MAIN MENU, your 3100/3600 unit is in PROGRAM MODE and you have pressed H to see the menu below. This is your "Main Menu" for online programming. Instructions for each option follow. Of course, remember that you always have help function keys at the bottom of your terminal screen. When you complete **SECTION 3**, you will know how to program online and put your unit to work for you!

COMMANDS ARE:

A	ADD A MESSAGE
C	COPY MESSAGES
D	DELETE MESSAGES
E	EDIT A MESSAGE
F	FIND A STRING
H	LIST VALID COMMANDS
I	INITIALIZE PARAMETERS TO DEFAULTS AND CLEAR ALL MESSAGES
L	LIST MESSAGES
N	DISPLAY NUMBER OF FREE BYTES
S	SET UP PARAMETERS
V	VIEW MESSAGES
<CR>	LIST NEXT MESSAGE
ESC	ABORT COMMAND

Add a Message

Use this command to program new messages. **Press** A to add a message. The terminal responds:

3 Online Programming

ADD MESSAGE #

Enter a number between 0 and 65534 (you designate each of your messages with a number) and **hit** Enter. The terminal responds with the current message option defaults, followed with:

REPLACE MESSAGE CONTROL OPTIONS (Y/N) ?

For now, **enter** N to leave the control options as they are. [Entering Y will open the OPTION MENU, which is where you can change message options. This is explained in Part **B**.]

When the terminal displays @, you may enter message text. When the twentieth character is entered on one message line, the program terminal will sound a bell or beep to indicate that a 3100/3600 Series standard line has been programmed, and you should move to the next line to complete your message. **Press** Enter to advance to the next line and continue entering text, or **press** Ctrl Z to end the message.

The terminal now asks:

ADD MESSAGE #xx (Y/N) <Y> ?

xx is one number larger than the message you just programmed. Continue the process or **select** N to stop adding messages.

The ADD MESSAGE # loop continues until:

1. The N response to ADD MESSAGE # returns you to MAIN> and you **press** H to return to the MAIN> COMMAND menu.

2. The next message number is already programmed and you see MESSAGE #xx ALREADY EXISTS. You are returned to the MAIN> COMMAND menu.

Copy Messages

Use this command to copy one existing message to other message number location(s). **Press** C to copy a message. The terminal responds:

COPY MESSAGE NUMBER >

Enter a message number and **hit** Enter. The terminal responds:

TO
STARTING AT MESSAGE NUMBER >

Enter the first message number location at which you wish to have this message copied and **press** Enter. The terminal responds:

3 Online Programming

ENDING AT MESSAGE NUMBER >

Enter the ending message number in the range of message locations to copy to and **press** Enter. If you only want to copy the message into this one location, make the STARTING AT MESSAGE # and ENDING AT MESSAGE # the same number.

The terminal responds:

COPY DONE

x MESSAGE(S) COPIED
TO MESSAGE NUMBER xx
THROUGH MESSAGE NUMBER xx

You are returned to MAIN>.

Note: *When programmed messages exist within the "copy to" location specified, no messages are copied. The terminal will say:*

x MESSAGES IN COPY RANGE

Delete Messages

Use this command to delete one or more messages. **Press** D to delete messages. The terminal responds:

DELETE
STARTING RANGE (<CR> = LAST):

Enter a number and **press** Enter. The terminal responds:

ENDING RANGE (<CR> = LAST):

Here you have three options: 1. Enter the same number to delete only one message. 2. Enter a higher number to delete a range of messages (deletes the first and last messages and all messages in between). 3. **Press** Enter to delete all messages from the message number entered at the first prompt to the end of the entire message program. The terminal will return a third prompt depending on which option you choose:

DELETE MSG xx (Y/N)? (for option 1)
or DELETE FROM MSG xx TO MSG xx (Y/N)? (for options 2 or 3)

Enter Y to confirm deletion, or N to cancel. You will be returned to MAIN>.

Note: The programming terminal does not accept non-digits or numbers greater than the largest programmed message.

3 Online Programming

Edit a Message

Use this command to edit an existing message. **Press** E to edit a message. The terminal responds:

EDIT MSG #

Enter the message number and **press** Enter. The terminal responds with the programmed message options, followed by:

REPLACE MESSAGE CONTROL OPTIONS (Y/N)?

For now, **enter** N to leave the options as they are. [Entering Y will open the OPTION MENU, which is where you can change message options. This is explained in Part **B**.] The terminal displays the first line of the message with the prompt:

REPLACE LINE (Y/N) ?

Enter N to leave the line of text as it is, or **enter** Y to replace it. If you choose Y, re-enter the entire line and **press** Enter. This process continues for each line of message text. Additional lines of text can be added to the end of messages. Terminate the editing of messages with Ctrl Z. You are returned to MAIN>.

Find a String

Use this to find messages containing a particular character string. **Enter** F; **enter** the word to be searched for; then **press** Enter. The 3100 unit searches your program from the beginning. When the string is found, the terminal displays the message number and the message. It also displays:

FIND>

Press Enter only to find the next message containing the string. Repeat until the terminal responds:

WAS NOT FOUND

Press Esc to end FIND A STRING before receiving the WAS NOT FOUND message. You are returned to MAIN>.

Notes: ***Find a String*** *is upper- and lower-case sensitive. This procedure may take a few minutes when the message program is large.*

List Valid Commands

Use this to list the MAIN> COMMANDS menu. **Press** H to see the menu.

Initialize Parameters to Defaults and Clear all Messages

Use this to clear your message program in the 3100/3600 unit and initialize parameters to defaults (See **APPENDIX B - DEFAULT SETTINGS**). **Press** I. The terminal asks you to confirm this:

3 Online Programming

CLEARING ALL MESSAGES
ARE YOU SURE?

Press Y to confirm. **Enter** N to abort this command. You are returned to MAIN>.

Note: *This command resets the Unit Address to Group #0 Unit #0. It also initializes the data log to the default size (1000), clears the data log, and time-and date-triggered message memory.*

List Messages

Use this to list one or more messages on the terminal screen. **Press** L. The terminal responds:

STARTING RANGE (<CR> = LAST):

Here you have two options: 1. **Hit** Enter to list the highest programmed message. 2. **Enter** a number and hit Enter. You see the prompt:

ENDING RANGE (<CR> = LAST):

Here you have three options: 1. **Enter** the same number and **hit** Enter to list only one message. 2. **Enter** a higher number and **hit** Enter to list all programmed messages within that range. 3. **Hit** Enter only to list all messages from the message number indicated to the end of the program. The terminal will display the message number, options, and the text for all message numbers specified.

Press Ctrl S to stop scrolling; **press** Ctrl Q to resume scrolling; **press** Esc to abort listing. You are returned to MAIN>.

Note: *The programming terminal does not accept non-digits or numbers greater than the largest programmed message.*

Display Number of Free Bytes

Use this to display message program information on the terminal screen. **Press** N. The terminal might respond with this example:

LARGEST MESSAGE NUMBER: 103
TOTAL NUMBER OF MESSAGES: 84
NUMBER OF FREE BYTES: 12031
NUMBER DELETED MESSAGES: 4

You are returned to MAIN>.

Set up Parameters

As this command has a long sub-menu of its own, its examples and instructions are found at the end of Part **A**.

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View Messages This option will be explained in **PART B**

Esc Use this to abort a command and return to MAIN>. Esc does not abort Delete, Initialize Parameters to Defaults and Clear All Messages, or Memory Tests, once they have been initiated.

Set up Parameters (resumed) Use this to see the SETUP COMMANDS sub-menu and implement its commands. **Press** S to put the 3100/3600 unit into this mode. It will display:

SETUP PARAMETERS
REVISION x

while it's in this mode. The terminal displays the this menu. Instructions for each option follow.

```
SET UP COMMANDS:
1) BLINK ON AND OFF DELIMITERS
2) NUMBER OF NULLS PRINTED AFTER A <CR>
3) SERIAL PORTS
4) CLOCK
5) PARALLEL PORT*
6) RATE FOR SCROLL AND CHAIN MESSAGE
7) BLINK ON AND OFF RATES
8) DEBOUNCE TIME
9) PRINT TIME AND DATE FOR MESSAGES
10)DATA LOGGING
11)RELAY CONTROL
12)GROUP AND UNIT NUMBER
13)MEMORY TESTS
14)DEFINE CLEAR FIFO MESSAGE
15)PROGRAM TIME OF DAY MESSAGES
16)PROGRAM DISPLAY SAVER TIMEOUT
<CR>PRINT THIS LIST

ENTER VALUE FOLLOWED BY <CR>
SETUP>
```

* will reflect PLC protocol

3 Online Programming

Blink On and Off Delimiters

Use this command to change character definition for the Blink On and Blink Off delimiters. The PMD defaults to [for the Blink On delimiter and] for the Blink Off delimiter. If these characters are needed for display in a message, however, either or both can be exchanged for other characters. When they are changed, all usages of the blink characters in the program will automatically be changed to the new characters. **Press** 1 and Enter to select new BLINK ON AND OFF DELIMITERS. The terminal responds:

```
BLINK ON AND BLINK OFF DELIMITERS
CANNOT BE THE SAME CHARACTERS.
ENTER BLINK ON CHARACTER <[>?
```

Enter your new Blink On delimiter and **press** Enter, or Enter only to leave it in its current state, shown within the brackets. The terminal responds:

```
ENTER BLINK OFF CHARACTER <]>?
```

Respond to this prompt in the same manner. You are returned to MAIN>.

To program a message where some, but not all, characters blink, use blink delimiters to toggle blink mode on and off. **Enter** the Blink On delimiter before the first character to blink; **enter** the Blink Off delimiter after the last character of blinking text. Blink delimiters have no effect on time, date, or variable data sets of messages. The *Blink Entire Message* option must be enabled to blink these items (see Part **B — MESSAGE ATTRIBUTES**).

***Note**: Delimiters can be any printable characters except control characters and the ^ character. Characters used as delimiters cannot be used for any other purpose.*

Number of Nulls Printed After a <CR>

Use this command to program a specific number of null characters to be sent to the *RS-232 port* after each <CR>. **Press** 2 and Enter to program your number. The terminal responds:

```
ENTER NUMBER OF NULLS <0>?
```

Enter a number between 0 and 255 and **press** Enter, or Enter only to leave it in its current state, shown within the brackets. The terminal does not accept non-digits or a number higher than 255. You are returned to MAIN>.

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Note: *Some printers require a delay time after receiving a carriage return to prevent loss of characters at the beginning of lines. This command allows the creation of a delay (after <CR>) that may be adjusted to the required value*

Serial Ports

Use this command to set up the *Computer Port* and/or the *Terminal/ Printer Port* and *Tape Port*. (This process can also be completed using the push buttons on the front of the unit and selecting SET UP SERIAL PORTS.) **Press** 3 and Enter. The terminal responds with the sub-menu:

```
SELECT WHICH MODE TO SETUP
1) COMPUTER INTERFACE
2) PROGRAM TERMINAL
3) PRINTER
4) TAPE IN AND OUT
?
```

Enter an item (1-4) to set up the port for that mode. The following prompts must be answered:

```
COMPUTER INTERFACE MODE (0=PMD, 1=ASCII) <0>
BAUD RATE (1=300, 2=600, 3=1200, 4=2400
                    5=4800, 6=9600) <9600>?
STOP BITS (SELECT 1 OR 2) <1>?
PARITY ENABLED (SELECT Y OR N) <N>?
PARITY MODE (0=ODD, 1=EVEN) <1>?
CHECKSUM TYPE (0=CRC, 1=EOR, 2=NONE) <1>?
```

Enter the proper letter or digit to select each item, or Enter to retain the current setting. Note than in some cases, parameters are fixed and won't be included in prompts:

Computer Interface: Uses all prompts.
Program Terminal: No Computer Interface or Checksum Type.
Printer: No Computer Interface or Checksum Type.
Tape In and Out: Select Baud Rate Only.

Notes: *Use Esc to exit the Serial Ports sub-menu. The Parity Mode prompt is not displayed when the parity is not enabled. Parity Enabled = 7 Bit Word Length — (RS-232 port only!!)/Parity Disabled = 8 Bit Word Length — (RS-232 port only!!) The setting of the PROGRAM TERMINAL port does not take effect until the unit is restarted.*

Clock

Use this command to set time and date or check the current settings. **Press** 4 and Enter. The terminal responds with the sub-menu:

```
SELECT CLOCK
DATE: 23-NOV-91
TIME: 2:23:35 PM
   1) SETUP DATE
```

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2) SETUP TIME
?

Select an item (1 or 2) for desired option. Option 1) SETUP DATE displays the following prompts:

MONTH (SELECT 1 TO 12) <11>?
DAY OF MONTH (SELECT 1 TO 31) <23>?
YEAR (SELECT 0 TO 99) <91>?

Option 2) SETUP TIME displays the following prompts:

HOURS FORMAT (SELECT 1=12 HR, 2=24 HR) <12>
HOURS (SELECT 1 TO 12) <2>? *
HOURS (SELECT 1=AM OR 2=PM) <PM>?*
HOURS (SELECT 0 TO 23) <14>?*
MINUTES (SELECT 0 TO 59) <23>?
SECONDS (SELECT 0 TO 59) <35>?

*Prompts returned depend on response to Hour Format prompt.

Notes: *Time is not updated on the terminal screen. Time is updated only when the Clock sub-menu is re-displayed.* ***Press*** *Esc to exit the Clock sub-menu and return to MAIN>.*

Parallel Port
AB
TI
MODICON
MODBUS PLUS
GE GENIUS I/O

This command gives you flexibility in seeting up the *Parallel/PLC Port and Message Control Terminals*. **Press** 5 and Enter. The terminal responds with the following prompts:

SETUP PARALLEL PORT*
0= INVERTED, 1=NON-INVERTED <0>?
0= BCD, 1=BINARY <0>?
0=8 BIT, 1=16 BIT DATA <1>?
TIMED SCAN (1=ENABLED, 2=DISABLE) <2>?
TIME FOR SCAN (4-99 msec) <4>?**
MESSAGE DISPLAY TIME (0-255 SEC.) <0>?

***This line will reflect PLC interface protocol and display board ID and revision.** Refer to the following parts of **SECTION 8 — PLC INTERFACING** for information about your particular unit.
PART A: 3X50 A-B INTERFACE
PART B: 3X60 SIEMENS/TI INTERFACE
PART C: 3X70 MODICON INTERFACE
PART D: 3X75 MODICON MODBUS PLUS INTERFACE
PART E: 3X80 GE GENIUS I/O INTERFACE

**Prompt returned only when TIMED SCAN is enabled.

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• The **INVERTED/NON-INVERTED** option lets you determine how the Parallel Port/PLC Port looks at the inputs: the way they come in as 1s or 0s.... (non-inverted) or the complements of these (inverted). Enter 0 or 1 and Enter, or just Enter to leave it in its current state. **For the PMD 3100/3600, *inverted* works as *non-inverted*, and *non-inverted* works as *inverted*.**

• The **BCD/BINARY** option lets you determine wheter the PMD will consider the input data lines as a Binary or Binary Coded Decimal number. Enter 0 or 1 and Enter, or just Enter to leave it in its current state.

• The **8 BIT/16 BIT DATA** option lets you determine whether the unit will only consider eight data lines and ignore the other eight, or consider all sixteen data lines.

• The **TIMED SCAN/TIME FOR SCAN** options are for setting a specified scan time for how often the *Parallel Port* inputs are read by the 3100/3600 product; otherwise the *Parallel Port* is scanned at the "system" scan rate (between 1 and 180 msec) plus the debounce time. If you **ENABLE** the **TIMED SCAN**, you then insert a msec number for the **TIME FOR SCAN**.

• The **MESSAGE DISPLAY TIME** option determines if the messages will remain on the display until replaced, or if they will be displayed for a specified time. When this display time is set to zero, all messages will remain on the display until they are replaced. If a specified time is entered (in seconds ranging from 1 to 255), the messages will each display for that time period before being replaced by he next.

When a non-zero display time is set for messages, all incorming messages read on the *Parallel Port* will placed "on hold" until each preceding messae has been displayed for this specified time. These messages are placed in a FIFO (First-in First-out) in the order in which they are read from the *Parallel Port*. They are displayed in this order (with their respective variable data sets) for the programmed length of time. The incoming message FIFO holds 32 readings (messages/data) from the *Parallel Port*. The FIFO is full when it contains 32 readings. Further readings are ignored until the FIFO contains less than its 32 reading maximum.

Rate for Scroll and Chain Message

Use this command to set up default time rates for chained and scrolling messages. The PMD 3100/3600 Series has a set rate for SCROLL

3 Online Programming

LEFT. Therefore, even though you are prompted to change the TIME RATE FOR SCROLL LEFT, the PMD will not recognize any changed time rates. **Press** 6 and Enter. The terminal responds with the sub-menu:

SETUP RATE FOR SCROLL AND CHAIN MESSAGE
1) DEFAULT TIME RATE FOR CHAIN MESSAGES <100>
2) DEFAULT TIME RATE FOR SCROLL UP <5>

Select an option (1or 2). The terminal displays:

ENTER TIME IN TENTHS OF SECONDS <5>?

For option 1) DEFAULT TIME RATE FOR CHAIN MESSAGES, **enter** a number between 1 (0.1 second) and 255 (25.5 seconds) and **press** Enter. This is the amount of time each message within a chained message will remain on the display. If a scrolling message is in the chain, however, it will display until it is done scrolling.

For option 2) DEFAULT TIME RATE FOR SCROLL UP and 3) DEFAULT TIME RATE FOR SCROLL LEFT, enter a number between 1 (0.1 second) and 99 (9.9 seconds) and **press** Enter. The terminal does not accept non-digits or numbers above the range specified. You are returned to MAIN>.

Blink On and Off Rate

Use this command to select the rate at which blinking characters blink on and off. **Press** 7 and Enter. The terminal responds:

CHANGE BLINK ON AND OFF RATES
BLINK ON TIME IN TENTHS OF SECONDS <5>?
BLINK OFF TIME IN TENTHS OF SECONDS <5>?

Enter a number between 1 (0.1 second) and 99 (9.9 seconds) and **press** Enter for each prompt, or just Enter to leave them at the current setting shown within brackets. The terminal does not accept non-digits or numbers above the specified range.

Debounce Time

Use this command to select the debounce time for 16 *Parallel Port* inputs and the four *Message Control Terminals*. The debounce time selection will cause the indicated input signal deleay (in addition to the scan time) to protect against noise when PLC outputs change. The debounce time does not apply when the *Parallel Port* is set for a timed scan. **Press** 8 and Enter. The terminal responds:

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```
PARALLEL PORT DEBOUNCE TIME
<IN DC MODE 5 Msec>
1) DC
2) AC
3) VARIABLE
?
```

• The current debounce time setting is shown within brackets. Select an option (1-3). Option **1) DC** sets the inputs for 5 to 30 VDC operation.

This debounce time is 5 msec. Option **2) AC** sets the inputs for 115 VAC operation. This debounce time is 47 msec. Option **3) VARIABLE** returns the following prompt:

```
ENTER TIME (1-99) <5>?
```

• Enter a number between 1 and 99 and **press** Enter for the desired number of msec debounce time delay, or just Enter to select the current setting shown within the brackets. You are returned to **MAIN**>.

Print Time and Date for Messages

Use this command to enable/disable printing time and date before messages.**Press** 9 and Enter. The terminal responds:

```
PRINT TIME AND DATE BEFORE EACH
MESSAGE SENT TO RS-232 PORT
(1=ENABLE, 2=DISABLE) <2>?
```

Enter 1 to have the time and date sent to the printer before each message is sent to the *Terminal/Printer Port*. **Enter** 2 to disable this option. You are returned to MAIN>.

Data Logging

Use this command to enable/disable the data log or clear the data log buffer. **Press** 10 and Enter. The terminal responds with the sub-menu:

```
SETUP>10
DATA LOGGING <DISABLED>
1) ENABLE
2) DISABLE
3) CLEAR
4) SIZE OF LOG<1000>
    ?
```

Select an option (1-4) for the desired function. The current state of options 1 and 2 is shown within brackets (DATA LOGGING <ENABLED/ DISABLED>). If you select option 1) ENABLE, logged messages will be stored in the data log battery-backed RAM memory when selected. If you select option 2) DISABLE, no messages will be stored in the data log memory when selected. If you select option 3)

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CLEAR, messages currently stored in the data log memory will be cleared from it. Option 4) SIZE OF LOG determines the number of entries (message numbers and variable data values) that the data log will hold. When enabled, the data log will store this number of readings and discard the oldest records. When you select this option, the terminal responds:

!!! WARNING — WHEN SIZE OF LOG CHANGED THE LOG IS CLEARED !!! SIZE OF LOG IN NUMBER OF ENTRIES <0>

Press Esc to save data log contents or enter a number from 0 to 3071 to set log size. Entries larger than 3071 prompts the message:

!!! ERROR - INSUFFICIENT MEMORY !!!

When this message is displayed, log size is not altered, log memory is not cleared, and you are returned to MAIN>.

***Notes**: Clearing data log memory does not clear time- and date-triggered message memory. This procedure may also be done externally by manipulating the MODE and ENTER push buttons on the PMD.*

Printing Logged Messages

This procedure is not a part of the menu but is used to print the messages stored in the unit's data logger as well as their variable data and the time and date that they were selected. Make sure the baud rate, stop bits and parity mode on PMD match those of the printer. **Connect** the printer to the unit at the *Terminal/Printer Port*. **Set** the PMD to DATA LOGGING using the MODE and ENTER push buttons on its front panel, and then **select** Print.

The PMD will display PRINTING DATA LOG and the printer will print the current time and date before printing the logged messages. When the data logging memory is finished printing, the unit displays:

PRINTING COMPLETE - PRESS RESTART.

Relay (Output Terminals) Control

Use this command to determine the length of time that the *Relay Output Terminals* will be energized when activated by a selected message, or to set the internal timer for the relay output terminals. **Press** 11 and Enter. The terminal responds:

ALARM RELAY DURATION (0-255 sec) <0>?

Enter 0 to have the *Relay Output Terminals* energized until a new message is selected. **Enter** a number between 1 and 255 for the num-

3 Online Programming

ber of seconds that you wish to have the *Relay Output Terminals* energized each time that a message programmed to energize the relay output is selected. Now the terminal lets you set or change the clock setting for a timed *Relay Output Terminal* energization. The terminal responds:

```
TIME OF DAY RELAY
    RELAY ON:  00:00:00
    RELAY OFF:  00:00:00
    (1=ENABLE, 2=DISABLE) <1>?
```

The numbers shown on lines 1 and 2 are the current clock setting for the timed relay output. These settings are in the form of HH:MM:SS. If you **enter** 2 to disable the timed alarm, you are returned to MAIN>. If you **enter** 1 to enable the timed alarm, you will receive the prompt:

```
SETUP ALARM RELAY ON TIME (Y/N)?
```

This prompt lets you set the time of day to energize the *Relay Output Terminals*. **Enter** N to leave the RELAY ON time as it is set, or **enter** Y to set the RELAY ON time. A Y response returns the prompts:

```
HOURS (SELECT 0 TO 23) <0>?
MINUTES (SELECT 0 TO 59) <0>?
SECONDS (SELECT 0 TO 59) <0>?
```

Respond to these prompts and then the terminal displays:

```
SETUP ALARM RELAY OFF TIME (Y/N)?
```

Use this prompt to set the time of day to de-energize the *Relay Output Terminals*. Respond to the prompts that follow in the same manner as with the SETUP ALARM RELAY ON TIME. Once the relay is turned on, it stays on until it is turned off. You will be returned to MAIN>.

Group and Unit Number

Use this command to set the unit address of the PMD if you are communicating through the *RS-422A Computer Interface Port*. This unit address is the group and unit numbers to which the PMD(s) will respond. **Press** 12 and Enter. The terminal responds:

```
GROUP = 0
UNIT = 0
SETUP GROUP NUMBER (Y/N)?
```

Enter N to keep the group number at its current setting or Y to change the group number shown. The terminal responds:

```
GROUP<0>?
```

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Enter a number between 0 and 15 and **press** Enter. The terminal responds:

```
SETUP UNIT NUMBER (Y/N)?
```

Enter N to keep the unit number at its current setting or Y to change the unit number shown. The terminal responds:

```
UNIT<0>?
```

Enter a number between 0 and 4095 and **press** Enter. You are returned to MAIN>.

Note: *The terminal will not accept invalid numbers for the unit address*.

Memory Tests

Use this command to perform self-testing of the program memory and/or data log memory chips. **Press** 13 and Enter. The terminal responds with the sub-menu:

```
MEMORY TEST FUNCTIONS
    1) E2 TEST 1
    2) E2 TEST 2
    3) DATA LOG RAM TEST
    ?
```

Select an option (1-3) and **press** Enter to test the integrity of the user-programmable chips. Option 1) E2 TEST 1 tests the program memory chips to see that they retain memory properly. The unit displays the number and size of the the memory chips and indicates the condition of the chips upon completion of the test. When you select this item, you see:

```
CAUTION - THIS WILL INITIALIZE MESSAGE MEMORY!!
CONTINUE (Y/N)?
```

Press N to abort or Y to continue testing. Example:

```
EEPROM TEST #1  *
 TESTING 2 8k EEPROM CHIPS
 EEPROM #1 IS OK
 EEPROM #2 IS OK
CLEARING MESSAGES
```

WARNING! WHEN THIS TEST IS COMPLETE, THE 3100/3600 UNIT EXECUTES A CLEAR MEMORY COMMAND. MESSAGE MEMORY IS CLEARED WHEN THIS TEST IS COMPLETED.

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Option 2) E2 TEST 2 tests the program memory chips and halts the test when an error occurs. The display shows the error address and bit pattern at which the memory failed to program and does not continue testing. If no error occurs, the display shows the message TEST DONE. When you select option 2, you see:

CAUTION - THIS WILL INITIALIZE MESSAGE MEMORY!!
CONTINUE (Y/N)?

Press N to abort or Y to continue testing. Examples:

EEPROM TEST 2	* EEPROM TEST 2 *
2 8k CHIPS	2 8k CHIPS
0603AE 55	TEST DONE

WARNING! WHEN THIS TEST IS COMPLETE, THE 300 UNIT EXECUTES A CLEAR MEMORY COMMAND. MESSAGE MEMORY IS CLEARED WHEN THIS TEST IS COMPLETED.

Option 3) DATA LOG RAM TEST tests the RAM chip used for storing data log entries. When you **select** 3, you see:

DATA LOG WILL BE CLEARED
CONTINUE (Y/N)?

Press N to abort or Y to continue testing. (Time- and date-triggered message memory is also cleared). When complete, the display shows RAM TEST COMPLETE or RAM TEST FAILURE. If these tests indicate bad PMD memory chips, contact UTICOR Technology customer service @ 1-800-832-3647.

Define Clear FIFO Message

Use this command to select a message number to be used on the *Parallel Port* to clear the incoming message FIFO (First-In-First-Out). **Press** 14 and Enter. The terminal responds:

A CLEAR FIFO MESSAGE IS NOT DEFINED.
or
CLEAR FIFO IS DEFINED AS MESSAGE <0>
DO YOU WANT TO CHANGE IT?

Enter N to leave this option undefined or **press** Enter to enter a message number value for clearing the FIFO. The terminal responds:

ENTER CLEAR FIFO MESSAGE NUMBER
WHERE 65535 INDICATES NOT DEFINED <65535>:

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Enter a number between 0 and 65535 and **press** Enter, or just Enter to leave it at its current setting shown within brackets. When selected on the *Parallel Port* in the DISPLAY MODE, this message number will cause the incoming message FIFO to empty (clear memory). The FIFO must contain less than 32 entries for it to accept the clear FIFO number. You are returned to MAIN>.

Program Time of Day Messages

Use this command to program up to 16 time- and date-triggered messages. Press 15 and Enter. The terminal responds with the following submenu:

```
                    Date Triggered Messages

Default Time Of Day Message:  XXXXX

MSG#      On                Off               MSG#      ON                OFF
1.    MMM DD HH:MM   MMM DD HH:MM        9.    MMM DD HH:MM  MMM DD HH:MM
2.                                        10.
3.                                        11.
4.                                        12.
5.                                        13.
6.                                        14.
7.                                        15.
8.                                        16.

  1. Modify An Entry
  2. Initialize List
  3. Modify Default Time Of Day Message
  4. Exit
```

Select an option. Option 1) MODIFY AN ENTRY lets you change existing time/date triggered message information. When you select option 1, you see the prompt:

ENTRY NUMBER

Enter a number between 1 and 16 and **press** Enter. The terminal responds:

DELETE (Y/N) <N>:

Enter Y to delete previously programmed information for this message location, or **press** N if this location has not been previously programmed. The terminal responds:

MESSAGE NUMBER <#####>:

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Enter a message number between 0 and 65534 and **press** Enter. Or, **press** Enter to select the number shown in brackets (the last number selected). This will be the message that will be displayed at the time/ date for this time-and date-triggered message. Now the terminal responds:

Every Day <Y>:

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PMD 3100/3600 Series User's Manual Addendum (79726-4_A1)

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343 St. Paul Blvd.
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1 (800) TEC-ENGR (832-3647)

Vist our web site at: www.avg.net

79726-4_A1
01/06/00

This addendum is for the PMD 3100/3600Series Programmable Message Displays. It contains information that was not included in the manual at press time. Read this addendum in its entirety before using the PMD 3100/3600 or consulting the user manual, then keep it with the user manual for future reference. If you have any questions or problems at any time when using the PMD 3100/3600, please call our technical support at the number provided on the front of this addendum.

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AVG Automation
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This addendum provides you with information on features of the PMD 3100/3600 Series Programmable Message Displays that is not covered in the manual.

The features or changes mentioned below are not in this revision (P/N 79726-4) of the manual.

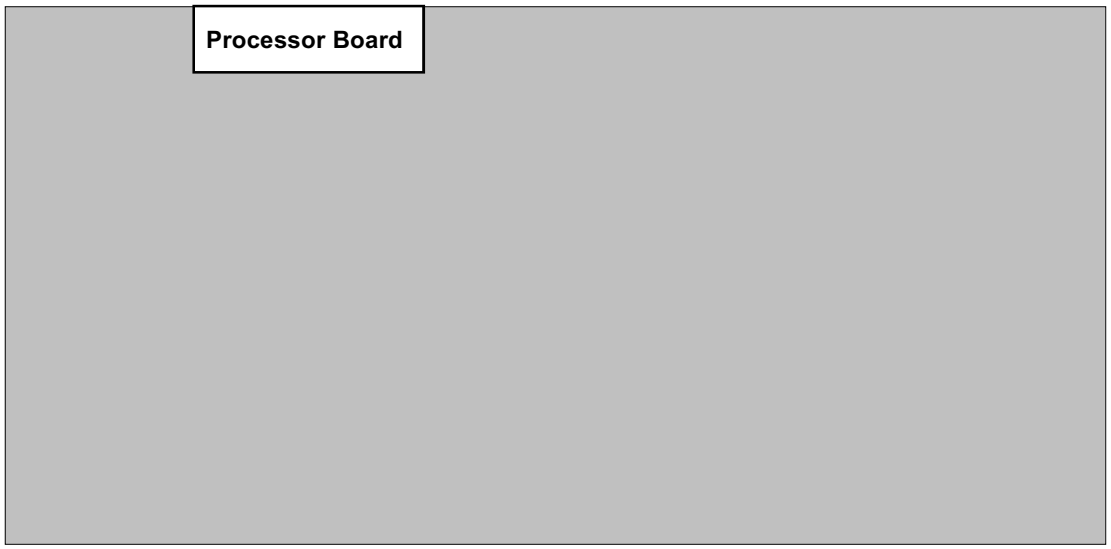
You **will not** be able to change the date to the year "00" while in the PROGRAM Mode with your PMD3100/3600 Series Programmable Message Display. Instead, you must go to the **SET CLOCK Mode**.

To access the SET CLOCK Mode you must use the push buttons located on the processor board within the unit (if you have a Remote Operator Station, you may, of course, use these push buttons to access the SET CLOCK Mode.)

CAUTION

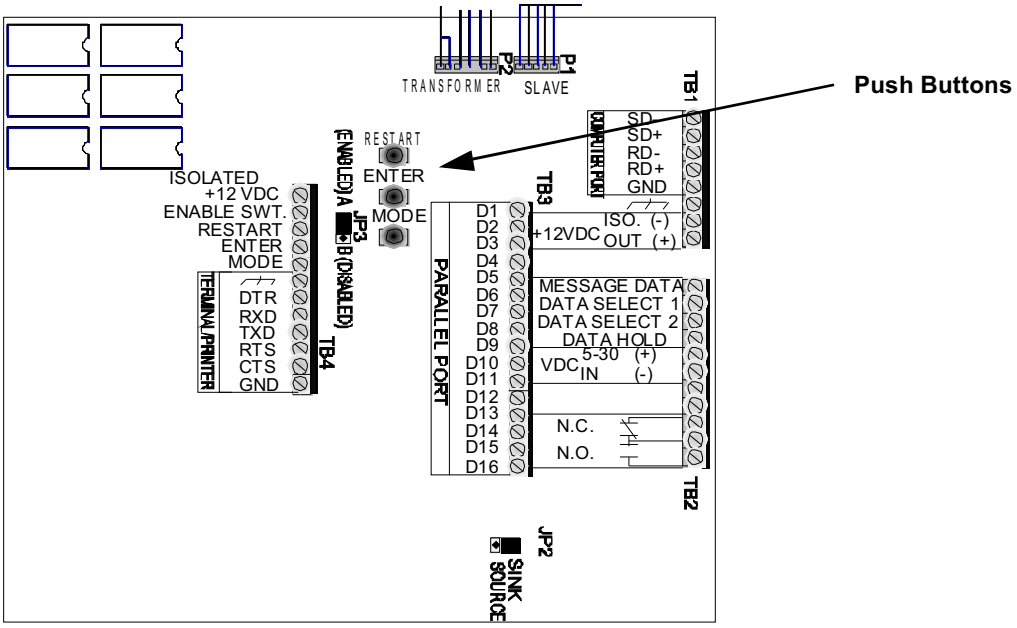
Use CAUTION when working within a unit with the power applied. Ensure the unit is properly grounded before placing your hands inside the unit. Do not use metal instruments to push the buttons. Be careful not to touch any components other than the push buttons on the processor board (labeled RESTART, ENTER, MODE).

Remove the rear panel of the unit to access the processor board. The processor board is located in the upper left section of the unit as shown in the figure below.



— continued on next page

Find the RESTART, ENTER, and MODE push buttons as shown in the figure below.



Press the RESTART Button, and then the use the MODE Button to toggle through the various modes of operation. Continue pressing the MODE Button until you have the SET CLOCK Mode displayed on the screen as shown below.

```
SET CLOCK

Press MODE to change
or ENTER to select
```

Press the ENTER Buttonand the following will appear. Press ENTER Button again to accept the time or date settings that appear in the field or MODE Button to change fields.

```
SET CLOCK
time   15: 13: 46
Press MODE to change
or ENTER to select
```

```
SET CLOCK
date 5-JAN-00
Press MODE to change
or ENTER to select
```

Time (shown in 24-hour format) and date in this mode both have three fields. The current field to set will blink. If the date does not show "00" (representing the year 2000), press the MODE Button until the display reads "00", then press the ENTER Button to select the settings shown. Click on the RESTART Button and the unit will self-test, and new date becomes effective.

These instructions (to change date using SET CLOCK Mode) are ***only relevant to year 2000, where the digits in the field are "00".*** *In other words, you may use the PROGRAM Mode (or SET CLOCK Mode) to change the date to year "01", "02", "03", etc. (If your unit was already up and running prior to January 1, 2000, it will roll over to "00" with no problems.)*

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