Datapanel 100 Range

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Datapanel 100 Range

Datapanels

Operator Interface Products

Datapanel 100 Range Operator's Manual

GFK-1528C *November 1999*

Warnings, Cautions, and Notes as Used in this Publication

Warning

Warning notices are used in this publication to emphasize that hazardous voltages, currents, temperatures, or other conditions that could cause personal injury exist in this equipment or may be associated with its use.

In situations where inattention could cause either personal injury or damage to equipment, a Warning notice is used.

Caution

Caution notices are used where equipment might be damaged if care is not taken.

Note

Notes merely call attention to information that is especially significant to understanding and operating the equipment.

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Revisions to This Manual

This version, GFK-1528C, includes the following changes as compared to the previous version, GFK-1528B:

- The Download cable (PC to Datapanel cable) is now provided with the configuration software. (pages 2-3, 4-3)
- Revised input power specifications for Datapanel 150. (pages 3-3, 7-3)
- Revised environmental specifications for Datapanel 150. (pages 3-3), 7-5
- ***Important information about power connections. (page 7-3)***
- Cabling diagrams for Datapanel 150 same as for Datapanel 160. (Appendix B)
- Additional corrections and clarifications as needed.

Content of This Manual

Chapter 1. **Quick Start:** provides a simplified introduction and operation guide.

Chapter 2. **Introduction to the Datapanel 100 Range:** provides an overview of capabilities, configuration ease, and system components.

Chapter 3. **Overview of Datapanel 100 Range:** provides a brief functional description of each of the Datapanel 100 Range models, and outlines features and capabilities.

Chapter 4. **Installing the Hardware:** outlines Datapanel installation.

Chapter 5. **Operation Guide:** provides operational guidelines for Run Mode scenarios.

Chapter 6. **Special Operations: Mode Menu:** outlines the use of the Mode menu to change display attributes and to operate the Datapanel in Off-line mode.

Chapter 7. **Specifications:** provides tables listing the various hardware, technical, electrical, and other Datapanel system specifications.

Appendix A. **Error Codes:** lists the standard comms block and system error codes.

Appendix B. **Cabling Diagrams:** provides Datapanel 100 Range cable diagrams.

Appendix C. **Glossary:** provides a glossary of terms applicable to Datapanel operation.

Related Publications

GFK-1658 *Data Designer Software User's Manual*

Contents

Chapter 1 Quick Start

This section is provided as a simplified introduction and operation guide. See subsequent chapters for more detailed information and explanation.

Mounting the Datapanel

After positioning the Datapanel in the cutout, secure using the spring clamps supplied with the Datapanel.

Connecting Cables

Connect the PLC-Datapanel cable between the PLC and the Datapanel. Connect the Datapanel power.

Startup

On power-up, the Datapanel will enter Run Mode and begin normal operation. The Start Up page will be displayed if one was specified during configuration with the configuration software. Otherwise, page 0 containing the Datapanel logo will be displayed. Two lines of display are reserved for system use. The top line displays a mini alarm log, a comms block error log, the date, and the time. The bottom line displays descriptive text for the function keys.

Viewing Other Pages

For a process that is running routinely, you would likely display a page which provides a good summary of process conditions. Other pages provide alternate views of the operation of the process. You can choose another page by typing in the page number and pressing ↵ (ENTER). Alternatively, you can scroll through the pages by pressing the ▲ or ▼ keys.

Viewing Overview Groups

Press **OVERVIEW** to see a list of overview groups which were configured for your application. The list of groups is displayed in pages with 10 groups being listed on each page. There can be a maximum of 5 Tags per group and 100 groups. Use <<< and >>> to move through the pages of the Overview list. Scroll through the pages of the Overview list until the required page is accessed. Use the ▲ or ▼ keys to select the required Overview Group from the displayed page. Press **TAGS** to display the tags and values associated with this group. You can return to the first page of the list at any time by pressing **OVERVIEW**.

Printing a Page

If the page being displayed has **PRINT** assigned to one of the F-keys, pressing that F-key will output the text content of the page to the printer.

Displaying Alarms

Press **ALARM LOG** to display the Alarm Log. When a tag exceeds its limits, it will remain in the Alarm Log until it has been acknowledged and returns to normal or until it has been overwritten by tags alarming at a later time in an overflowing alarm log. Unacknowledged alarms are signified by an asterisk to the left of the alarm.

Acknowledging Alarms

Press **ALARM ACK** to acknowledge an alarm. The first press of the key clears the global alarm bit. Typically, this bit is sent to the controller to silence the audible alarm. Subsequent presses of the key clear each alarm in turn, starting with the earliest of the alarms. Press the ▲ or ▼ keys to access other pages of the log.

Adjusting Display Attributes

Press **MODE** to display the Mode Menu. Press DISP to display the Display Control Menu. Press **INC** or **DEC** repeatedly to adjust the contrast to the desired level.

Press ON to turn the display backlight on, and enter a number within the range of 0 to 99 minutes. If the Datapanel keyboard is inactive longer than this period the display will be turned off. The display will be turned back on when any key is pressed. If zero is entered, the backlight will remain on at all times.

Press **EXIT** to return to the main Mode menu.

Press **EXIT** to return to the displayed page.

Setting the Time and Date Display

Press **MODE** to display the Mode Menu. Press **OFF-L** to go off-line and display the Off-Line Mode menu. Press **CLOCK** to display the Set Clock menu.

Press the up-down arrow keys (▲ ▼) to move from field to field on the display. Using the numeric keypad, type in the desired values for the field, then press ↵.

Press **UPDATE** to confirm the entries, update the clock, and return to the main Off-Line Menu.

Or, press **QUIT** to abort the option and return to the main Off-Line Menu without changing the clock settings.

Press **EXIT** to return to the main Mode menu.

Access the Run Mode by pressing **EXIT**.

Modifying the Process

An operator can modify the on-going process by using the Drive Out function of the Datapanel. This enables fresh values to be transmitted to any configured Drive Out tag. If a softkey has been configured for Drive Out, press that key to access the Drive Out function.

A list of tags available for Drive Out and their associated index numbers will appear on the display. Enter the index number using the numeric keypad or the numeric touch region. Press ↵. Next enter the numeric value that you want to send to the PLC. Press ↵. (If an incorrect value is entered, the message, **bad input**, is displayed and the value must be re-entered.) Additional Drive Out tags may then be entered. Pressing ↵ a second time, after a value has been transmitted, terminates the Drive Out option and the normal page will be displayed.

Special Drive Out Capabilities

Six types of Enhanced Drive Out (output operations) can be configured: Macro, Jog, Toggle, Ramp, Recipe, and Direct Write. If a tag with this capability is selected, the designation of the softkeys is re-assigned so that the user-defined labels for the toggle, ramp, or direct-write functions will be displayed.

Macro. Pressing and holding the F-key defined for the Macro function will cause a custom-configured operation to be performed.

Jog. Pressing and holding the F-key defined for the function will continuously send a value (set or reset) to the configured item while the F-key is depressed. When the operator releases the F-key, the opposite value will be sent.

Toggle. Pressing the F-key defined for the toggle function will invert the value of the configured item. For example, this could be used to switch a valve from on to off.

Recipe. Pressing the F-Key defined for the recipe function will run the recipe feature configured. This can load a group of recipe tags with pre-defined values, transmit a group of recipe tags down to the PLC device, or perform both of these tasks with just one press of a key.

Ramp. Pressing the F-key defined for the ramp function will display the current value and allow this value to be modified by pressing the up-down arrow keys (▲ ▼). The new value is confirmed by pressing ↵.

Direct Write. Pressing the F-key defined for the direct-write function will either:

1. Drive Out a preconfigured value.
2. Request operator input of a value to Drive Out.

Password Protection

Some functions may be protected at the time of configuration. If so, a prompt is displayed asking for the password. The correct password for the particular option must be entered in answer to the prompt. An incorrect password aborts the request.

Chapter 2 Introduction to the Datapanel 100 Range

The Datapanel family consists of a series of low-cost Human-Machine Interfaces enabling the transfer of data from a Programmable Logic Controller (PLC) and other intelligent control devices to a comprehensive operator terminal. Datapanels are self-contained, solid state industrial display systems incorporating their own display screens and keypads. The Datapanel 100 Range within the Datapanel family of Operator Interfaces (OI) are an ideal replacement for discrete operator input and annunciation devices. Because of its many configurable options, a Datapanel can meet applications ranging from simple pushbutton replacement to complex interfaces beyond the capabilities of most small OIs.

Strong Commonality With Broad Range of Capabilities

With a uniform software and hardware architecture, Datapanels allow the user to produce an OI consistent with application budget and performance requirements while maintaining upgradeability. An expanding library of over 80 controller protocols is included with each Datapanel, meaning that a change in control hardware only requires reconfiguring communications and does not mean re-implementing the OI.

With a consistent architecture, Datapanel hardware is scaled to meet the cost and performance requirements of each particular model. That means application software can run on all models, providing extensive functionality on even the lowest priced Datapanel. Application software makes Datapanels perform with efficiency. A wide range of applications software is built into every model.

An Operator Interface application is not restricted to emulating push buttons. Application software in Datapanels supports development of far more useful OI systems. Operator Interface software is included in every Datapanel. The software supports configuration of simple or complex OIs.

Standard features of all Datapanel models include:

- **Controller Communications.** Reads and writes data to the control equipment via a serial port.
- **Integrated Keypad.** Includes programmable function keys.
- **Broad Protocol Support.** Over 80 protocols supported.
- **Analog and Digital Tag Scaling.** Converts raw data to and from engineering units, and adds tag name information.
- **Display Real-Time Data.** Provides information on the current state of the plant process.

- **Optional Display Modes.** Continuous updates; updates continuously only when page is displayed; updates once when page is first displayed.
- **Alarm Manager.** Checks for analog and digital alarms, maintains a log of active alarms and supports operator acknowledgment of alarms.
- **Graphic Page Display.** Displays static and dynamic text on up to 100 user-configured pages per Datapanel. Up to 512 dynamic elements may be updated from the controller per page. Multiple font sizes allow for emphasis of important data.
- **Softkeys.** Six or eight keys per page, for up to 800 user-defined buttons per Datapanel. Buttons may change pages, write data, or perform other OI functions.
- **Overview Display.** Predefined tabular display of Datapanel and controller data.
- **NEMA 4/12 (IP65) Rated.** Ruggedized for harsh industrial environments.

Configuration Software

Configuration of a Datapanel is quick and easy. Datapanels feature a common software environment, which means that configuring for one model is just like configuring for another. A PC-based tool operating under Windows is used to create a database for the Datapanel. The database and communications protocol are loaded to the Datapanel via a serial port, and the OI can then be put on-line. The configuration software is sold separately. A single copy of the configuration software can be used to configure any of the Datapanel range. The configuration software requires a PC-compatible computer running Windows 95®, Windows 98®, or Windows NT®.

Industrial Housing

Datapanels are designed for use in demanding industrial applications. With over 15 years experience in meeting the requirements of industrial users, Datapanels avoid the problems that can plague lesser-quality products. All hardware is designed to meet industrial application requirements. Datapanels are of compact shallow design. All front external surfaces are sealed and protected to NEMA 4/12 (IP65) standards against the penetration of water and foreign particles. Datapanels are ideally suited for use as ruggedized panel-mounted units in harsh industrial environments.

Components of the System

A Datapanel system includes:

- 1 unit from the Datapanel 100 Range, incorporating an LCD display screen and an integrated membrane keypad.
- 1 Operator's Manual (this book).
- 6 mounting clips.
- Power supply mating connector (attached to Datapanel).

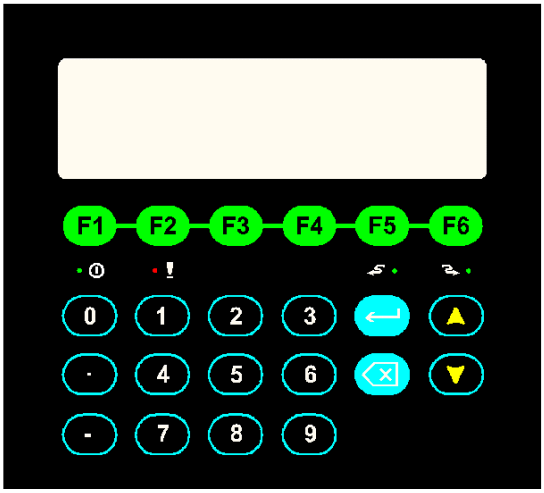
Although Datapanels are self-contained units, the use of a PC is necessary when configuring the system and when databases are being downloaded to the Datapanel.

Chapter 3

Overview of Datapanel 100 Range

A brief description of each of the Datapanels is given below. A summary of Datapanel features and capabilities is given in Table 3-1. Chapter 4 provides information on installing the Datapanel, Chapter 5 provides operational information, Chapter 6 provides information on special operations, and Chapter 7 provides detailed specifications.

The Model 150 and Model 160 are similar in appearance. They differ in their functional capabilities. The primary differences are that the Model 150 has only one serial port and does not support bar graphs, bitmaps, meters, trends, PC104 expansion.



Datapanel Model 150

The Model 150 is an economical Operator Interface with powerful functionality. It includes a 240 x 64-pixel display with function keys and numeric keypad. Variable text size is supported. The Model 150 can display 6 lines of 40 characters each when configured for the minimum text size of 6 pixels wide x 8 pixels high. An extensive list of protocols is supported, making the Datapanel compatible with many supervisory products. Through the runtime software, the clock may be used to synchronize the controller time.

The Model 150 is a good choice for pushbutton replacement. With six user function keys available on each of 100 pages, up to 600 pushbuttons can be defined. The powerful runtime software that is standard on all Datapanels makes the Model 150 even more functional. Use it to manage alarms, report diagnostic information and enter operator data.

Datapanel Model 160

The Model 160 includes a 240 x 64 pixel display with function keys and numeric keypad. Variable text size is supported, along with bitmap graphics, bar graphs, and real-time trends. The Model 160 can display 6 lines of 40 characters each when configured for the minimum text size of 6 pixels wide x 8 pixels high. A second serial port may be used for serial printing of alarm messages and reports, providing a hard copy of all system events. In lieu of printing, the second serial port may be used to run a second protocol independent of the first serial port. An extensive list of protocols is supported, making the Datapanel compatible with many supervisory products. An on-board real-time clock is used to accurately time stamp all system events. Through the runtime software, the clock may be used to synchronize the controller time. Software for the Model 160 includes real-time trends and the Model 160 supports PC104 expansion.

The Model 160 is a good choice for pushbutton replacement. With six user function keys available on each of 100 pages, up to 600 pushbuttons can be defined. The powerful runtime software that is standard on all Datapanels makes the Model 160 even more functional. Use it to manage alarms, report diagnostic information and enter operator data.

Minimum Customer Supplied Hardware

A PC or equivalent, running Windows 95, Windows 98, or Windows NT, is required to configure Datapanels and transfer databases and protocol to the Datapanel. The minimum capabilities are:

- 486 DX2/66
- 8 MB RAM
- VGA Color Display
- 10 MB Hard Disk Space

Table 3-1. Summary of Datapanel 100 Range Features and Capabilities

Features & Capabilities	Datapanel Model 150	Datapanel Model 160
Processor	AMD AM188EM-20MHz	NEC V20-10MHz
LCD Display Size (pixels) (mm) (in.)	240x64 124 x 35 mm (4.88 x1.38 in.)	240x64 124 x 35 mm (4.88 x1.38 in.)
Display capability with minimum text size	40 char 6 lines	40 char 6 lines
Minimum Text Size (pixels)	6w x 8h	6w x 8h
Database Size	64k	64k
Backlight	LED	LED
Memory, Flash	512KB Flash	512KB Flash
Memory, SRAM or DRAM	128KB SRAM	128KB SRAM
Serial Ports	1 RS232/485	1 RS232/485, 1-RS232
Additional Ports	No	No
Alarm Contact	No	No
Standard Software Features	Tag Scaling, Static and Dynamic data display, Alarm Manager, Read/Write to controller, Overview Display, Configurable Function Keys, Downloadable Database and Protocol, Variable text sizes	Tag Scaling, Static and Dynamic data display, Alarm Manager, Read/Write to controller, Overview Display, Configurable Function Keys, Downloadable Database and Protocol, Variable text sizes
Bar Graphs	No	Yes
Bitmap Graphics	No	Yes
Real-Time Trends	No	Yes
VT 100 Emulation	No	Option
PC104 Expansion	No	Yes
Function Keys per Page	Six	Six
Data Entry Keypad	22 keys	22 keys
Touch Screen	No	No
Controller Protocols	Over 80 supplied, including GE Fanuc, Modicon, Allen Bradley, Square D, Mitsubishi, Omron, Siemens, Idec etc. Call for details.	Over 80 supplied, including GE Fanuc, Modicon, Allen Bradley, Square D, Mitsubishi, Omron, Siemens, Idec etc. Call for details.
Analog Tags	500	500
Digital Tags (2 bits per tag)	500	500
Display Pages	100	100
NEMA, UL, CUL, CE	4X/4/12, UL(C1D2), CE	4X/4/12, UL(C1D2), CE
Environmental	0 to +60 Deg. C Operating Temp	0 to +50 Deg. C Operating Temp
Dimensions (Inches)	8.19 Wide x 7.40 High x 1.88 Deep	8.19 Wide x 7.40 High x 2.71 Deep
Weight (lb.)	1.75	1.75
Panel Cutout (Inches)	7.75 W x 6.97 H	7.75 W x 6.97 H
Power Input	10-35VDC (600 mA @10VDC) (Correct polarity must be observed.)	12-35VDC, 24V AC (750 mA @12VDC)
Shock	15G, 11ms, half-sine	—
Vibration	1G, 57 to 500 Hz	—

Chapter 4

Installing the Hardware

Physical Characteristics

Datapanels are housed in two molded enclosures that form the front and the rear sections of the unit. The front section of the Datapanel 100 Range forms a bezel with a large central aperture giving access to the LCD display and to the membrane keypad. The system hardware is mounted to the rear section with a gasket that adheres to the inner surface of the bezel and is used to seal the unit to its enclosure. This gasket (bezel) ensures conformity with the IP65 (NEMA 4/12) rating. The rear section of the housing is a simple cover designed to fully enclose the system hardware. The two sections are secured to one another by snapping them together; the four plastic clips (one located near each corner) should fully latch to one another. The physical dimensions and the required panel cutouts are shown in Table 4-1.

Table 4-1. Physical Dimensions and Panel Cutouts

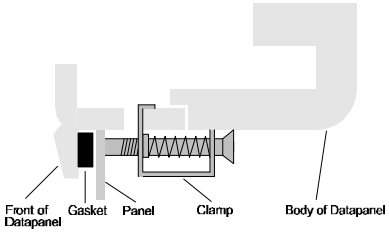
Features	Model 150	Model 160
Dimensions (Inches)	8.19 Wide x 7.40 High x 1.88 Deep	8.19 Wide x 7.40 High x 2.71 Deep
Panel Cutout (Inches)	7.75 W x 6.97 H	Same as Model 150

Mounting Datapanels

The Datapanel comes with a gasket glued in place on the bezel to ensure compliance with protection ratings. The Datapanel is secured using miniature screw clamps. The mounting points for the clamps are located on the front section of the Datapanels. Access to the rear of the unit is necessary so that clamps can be fitted.

After positioning the Datapanel in the cutout, the unit is then secured using the spring clamps as shown in Figure 4-1. Working from the rear of the panel, the clips must be located in the slots shown in the diagram and marked A. The clamps should be tightened evenly so as to cause the nuts to rise up the screw threads and thus close the springs. It is important that the screws are not over-tightened as the springs may then be deformed resulting in an improper mounting of the Datapanel. A total of six clamps is used to secure the Datapanel 100 range.

Clamp Slot Locations



Clamp Mounting Detail

Figure 4-1. Datapanel Mounting Clamps

Connection Cables

Two connecting cables are required when using the Datapanels:

- The cable used to connect Datapanels to the controller. As a general guide, the only pin connections required at the Datapanel end are Tx, Rx, Signal, Ground; with RTS connected to CTS. Refer to your controller documentation for details of connections at the controller end. This cable is not supplied with the Datapanel, however, some Datapanel to PLC cables are available for purchase. Contact your local distributor for information on specific cable assemblies.
- The download cable is used when transferring databases or protocols from the configuration software to the Datapanel. The cable enables connection to a standard PC. For non-standard PCs, consult the PC manual to check the pin configuration at the PC end of the cable. This cable is supplied with the configuration software.

Chapter 5 Operation Guide

Datapanels operate in one of two modes:

- Run Mode - enables real time processes to be viewed from configured displays downloaded to the Datapanel.
- Off-line - enables the configuring of the communications port, setting the date and time, loading databases and protocols, and enabling or disabling alarm checking.

On power-up, the Datapanel enters Run Mode and begins normal operation. The Start Up page will be displayed if one was specified during configuration with the configuration software. Otherwise, page 0 containing the Datapanel logo will be displayed. The screen layouts of all Datapanels are similar in appearance, but vary slightly according to the capabilities of the various models. Two lines of display are reserved for system use. The top line displays a mini alarm log, a comms block error log, the date, and the time. The bottom line displays descriptive text for the function keys. The keys shown are the default configuration. Any of the keys may be assigned other labels and functions during configuration with the configuration software. They may have different labels and functions on different display pages. When the keys are reprogrammed from their default value, they are often referred to as *softkeys*.

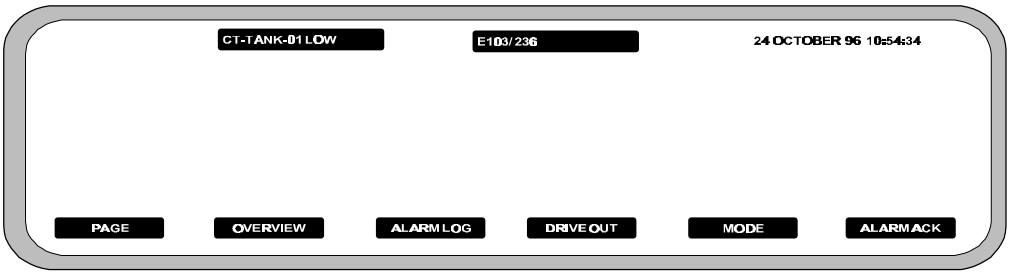


Figure 5-1. Function Keys

The default Run Mode F-keys are:

- **PAGE** - displays configured pages. Often, the first page is configured as an index or menu of all other pages.
- **OVERVIEW** - displays configured overview groups.
- **ALARM LOG** - displays the alarm log.
- **DRIVE OUT** - allows the operator to write to the controller.
- **MODE** - allows the operator to switch between the Run Mode and Off-line.
- **ALARM ACK** - allows the operator to acknowledge alarms.

Typical Operation Scenarios

Routine Processing

For a process that is running routinely, you would likely display a page which provides a good summary of process conditions. The page might include a trend chart showing performance over some time period, a bar chart showing the availability of a critical process supply, and other elements showing constantly updating values of parameters indicating process efficiency (e.g., cans filled per hour, gallons of fruit juice per minute, KW of electricity consumed.)

Viewing Other Pages

Other pages provide alternate views of the operation of the process. For instance, this would be useful if you noticed a change in some parameter and you wanted more detail on that aspect of the process. You can choose another page by typing in the page number and pressing ↵ (ENTER). Alternatively, you can scroll through the pages by pressing the ▲ or ▼ keys. The ▼ key displays the next page; the ▲ key displays the previous page. Page 1 or the last displayed page will appear when you press **PAGE.** If so configured by the configuration software, the Start Up page may show a list or menu of other pages. If so configured, you can use a re-defined F-key to access other pages.

Viewing Overview Groups

Press **OVERVIEW** to see a list of overview groups which were configured for your application. Each group contains a maximum of 5 configured tags that have been grouped together during configuration because they are relevant to each other, e.g., temperatures or pressures. There may be up to 100 groups. The list of groups is displayed in pages with 10 groups being listed on each page. When the **OVERVIEW** key is pressed, the designation and function of some of the softkeys change. For instance, one of the F-key label displays a left-chevron design (**<<<)** and another displays a right-chevron design (>>>**).**

Use <<< to move backwards through the pages of the Overview list. Use >>> to move forwards through the pages of the Overview list. Scroll through the pages of the Overview list until the required page is accessed. The range of Overview Groups on a particular page of the list is shown at the top of the display. Use the ▲ or ▼ keys to select the required Overview Group from the displayed page. Press **TAGS** to display the tags and values associated with this group. You can return to the first page of this list at any time by pressing **OVERVIEW.**

Printing a Page

If the page being displayed has **PRINT** assigned to one of the F-keys, pressing that F-key will output the text content of the page to the printer. For instance, you may want to do this at the end of a shift in order to have a permanent record of conditions at that time. Graphics on the page will not be printed.

Only the Datapanel Model 160 includes a second port (COM2) that allows printing. Printing is only possible if the COM2 port is not already being used for multi-port communications.

Alarm Conditions

If one of the configured tags exceeds its limits, an alarm message will appear in the mini alarm log window and be added to the alarm log. Press the **ALARM ACK** F-key to acknowledge the alarm(s).

Displaying Alarms

Press **ALARM LOG** to display the Alarm Log. The capacity and display characteristics of the logs depend on the Datapanel type and are described in the table below. If the capacity of the log is exceeded, the earlier alarms will be lost. When a tag exceeds its limits, it will remain in the Alarm Log until it has been acknowledged and returns to normal or until it has been overwritten by tags alarming at a later time in an overflowing alarm log. Unacknowledged alarms are indicated with an asterisk.

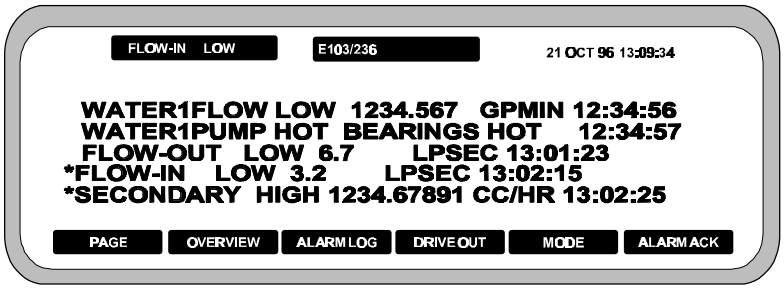


Figure 5-2. Alarm Log

Acknowledging Alarms

Press **ALARM ACK** to acknowledge an alarm. The first press of the key clears the global alarm bit. Typically, this bit is sent to the controller to silence the audible alarm. Subsequent presses of the key clear each alarm in turn, starting with the earliest of the alarms. Press the ▲ or ▼ keys to access other pages of the log.

Additional Alarm Information

If the Datapanel has been configured to do so, selected alarms will be printed automatically as they occur. (The Datapanel 160 includes a second COM2 port that allows printing if the port is not already being used for multi-port communications.) The mini alarm log shows the earliest unacknowledged alarm. The mini alarm log is updated as each alarm is acknowledged. When all alarms have been acknowledged, the mini alarm log is removed until another alarm condition occurs.

The **ALARM LOG** function key is displayed only if alarms are enabled. If the alarms were configured as disabled or have been disabled in the Off-line option, the **ALARM LOG** and **ALARM ACK** function keys will be displayed blank.

Table 5-1. Alarm Log Characteristics

	Datapanel 150, 160
Alarm Capacity	50
Alarms/Page	5
Mini Alarm Log	10 characters of tag name
ACK method	* in ACK symbol column means not acknowledged
ANALOG ALARMS	
1st Column	ACK symbol
2nd Column	10 characters of tag name
3rd Column	4 characters of alarm type
4th Column	11 characters of value
5th Column	5 characters of units
6th Column	8 characters of time
7th Column	Not used
DIGITAL ALARMS	
1st Column	ACK symbol
2nd Column	10 characters of tag name
3rd Column	4 characters of alarm type
4th Column	16 characters of status
5th Column	Not used
6th Column	8 characters of time
7th Column	Not used

Modifying the Process

An operator can modify the on-going process by using the Drive Out function of the Datapanel. This enables fresh values to be transmitted to any configured Drive Out tag. If a softkey has been configured for Drive Out, press that key to access the Drive Out function.

Password Protection

The Drive Out function is usually password protected at the time of configuration. If so, when Drive Out is attempted, a prompt is displayed asking for the password. As there are two Drive Out options, two Drive Out passwords may have been configured, referenced to which display you have on the screen when you request Drive Out: Page, and Overview. The correct password for the particular option must be entered in answer to the prompt. An incorrect password aborts the request. The Drive Out procedure is largely the same for each of the two options.

Selecting a Tag and Entering a Value

A list of tags available for Drive Out and their associated index numbers will appear on the display. Enter the index number using the numeric keypad or the numeric touch region. Press ↵. Enter the value you want to send and press ↵ again. If an incorrect value is entered, the message, **bad input**, is displayed and the value must be re-entered.) Additional Drive Out tags may then be entered. Pressing ↵ a second time, after a value has been transmitted, terminates the Drive Out option and the normal page will be displayed.

Special Drive Out Capabilities

Enhanced Drive Out: Six types of Enhanced Drive Out can be configured: Macro, Jog, Toggle, Ramp, Recipe, and Direct Write. If a tag with this capability is selected, the designation of the softkeys is re-assigned so that the user-defined labels for the jog, toggle, ramp, recipe, or direct-write functions will be displayed.

Macro Pressing the F-key defined for a macro function causes a custom-configured operation to be performed.

Jog Pressing and holding the F-key defined for the function will continuously send a value (set or reset) to the configured item while the F-key is depressed. When the operator releases the F-key, the opposite value will be sent.

Toggle Pressing the F-key defined for the toggle function will invert the value of the configured item. For example, this could be used to switch a valve from on to off.

Recipe Pressing the F-key defined for the recipe function will run the recipe feature configured. This can load a group of recipe tags with pre-defined values, transmit a group of recipe tags down to the PLC device, or perform both of these tasks with just one press of a key.

Ramp Pressing the F-key defined for the ramp function will display the current value and allow this value to be modified by pressing the up-down arrow keys (▲ ▼). The new value is confirmed by pressing ↵.

Direct Write Pressing the F-key defined for the direct-write function will either:

1. Drive Out a preconfigured value.
2. Request operator input of a value to Drive Out.

Chapter 6 Special Operations: Mode Menu

The Mode menu (see Figure 6-1) is normally not used during routine operation of the Datapanel. It allows the operator to display information about the Datapanel, change the attributes of the display, or operate the Datapanel in the off-line mode. Press **MODE** to display the Mode Menu.

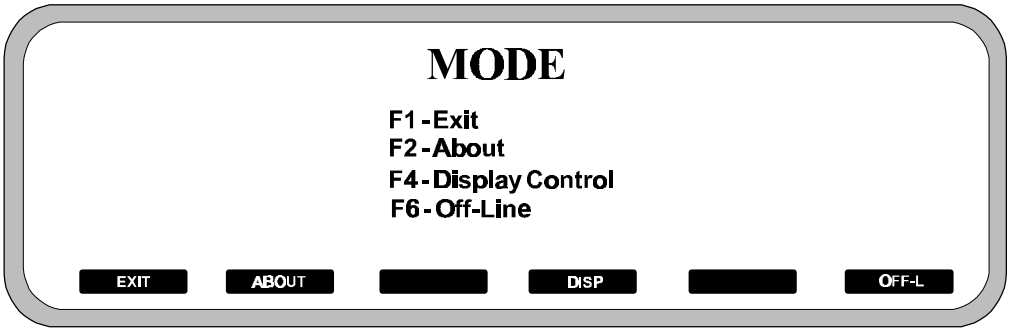


Figure 6-1. Mode Menu

Exit

Press **EXIT** to return to the startup page.

About Menu

Press **ABOUT** to display information about the Datapanel software, database, and protocol. This information cannot be edited. On the Datapanel 150 press **MORE** to display the configuration of the port settings. On the Datapanel 160, press PORTS to display the configuration of the port settings. On the DP160, press PRTCL to display information about protocols configured for and loaded for ports 1 and 2. Press **EXIT** to return to the main Mode menu.

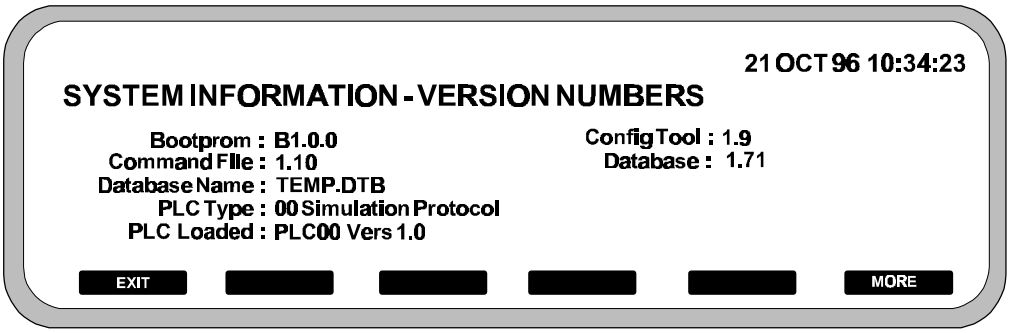


Figure 6-2. About Menu (DP150)

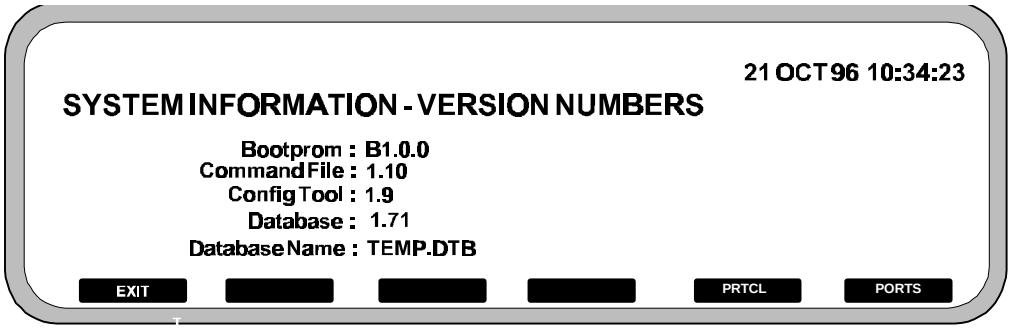


Figure 6-3. About Menu (DP160)

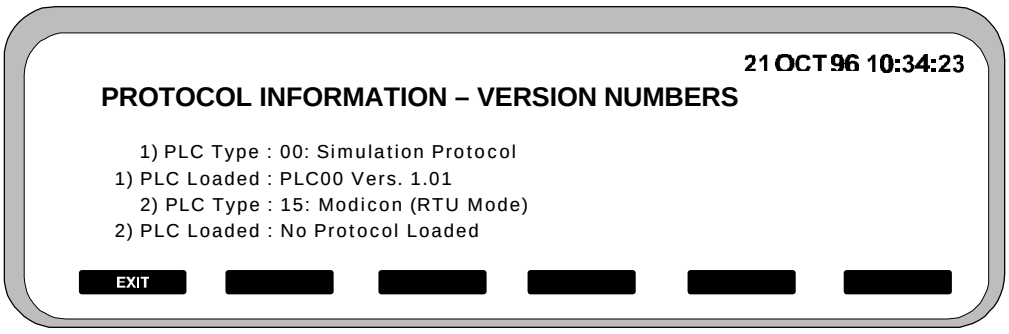


Figure 6-4. Protocol (DP160)

Display Control Menu

Press **DISP** to view the Display Control Menu. This menu allows the operator to change the display contrast setting or to switch the backlight on or off. Unless the backlight is configured OFF with the configuration software, the default is ON.

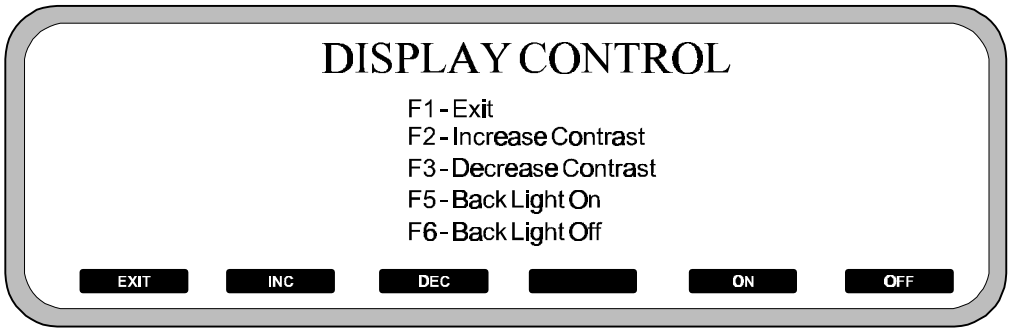


Figure 6-5. Display Control Menu

Press **INC** repeatedly to increase the contrast to the desired level.

Press **DEC** repeatedly to decrease the contrast to the desired level.

Press **ON** to turn the display backlight on. The Datapanel will display the prompt:

Enter delay period in minutes -

If you want the display to be turned off after a period of inactivity, enter a number within the range of 0 to 99 minutes. If the Datapanel keyboard is inactive longer than this period the display will be turned off. The display will be turned back on when any key is pressed. If zero is entered, the backlight will remain on at all times. Enter the time period using the numeric keypad.

Press **OFF** to turn the backlight off. This should be done in environments where the backlight is not needed in order to conserve power and extend the life of the backlight fluorescent tube.

Press **EXIT** to return to the main Mode menu.

PLC Fault Screens

User GE-Fanuc SNP/SNP-X (protocol 68) will have another button available on the MODE screen. F5 is labeled FAULT. These screens allow the user to view the current run-mode of a PLC device and its PLC and I/O Fault tables. If write privileges are enabled, these tables may be cleared from the Datapanel and the run-mode changed.

Configuring PLC Fault Screen Options

Additional configuration is required if the Datapanel is used in a multi-drop application or the Datapanel is to have the ability to modify the fault table or the run-mode of the PLC. If a multi-drop network is connected to the Datapanel, the SNP IDs of the PLCs must be entered using the PC configuration tool . Similarly, if the Datapanel is to have write privileges, this must be set with the PC configuration tool. Neither of these options is the default.

Selecting the PLC

If a multi-drop network is used, or SNP/SNP-X is chosen for both Port 1 and Port 2, the user will be prompted for which PLC they wish to communicate with after pressing FAULT on the MODE screen. The arrow keys may be used to highlight the correct SNP ID and the F-key labeled PORT toggles the communication port selection. The ENTER F-key continues to the PLC Faults screen.

PLC Faults Screen

This screen displays the PLC Faults log of the PLC.

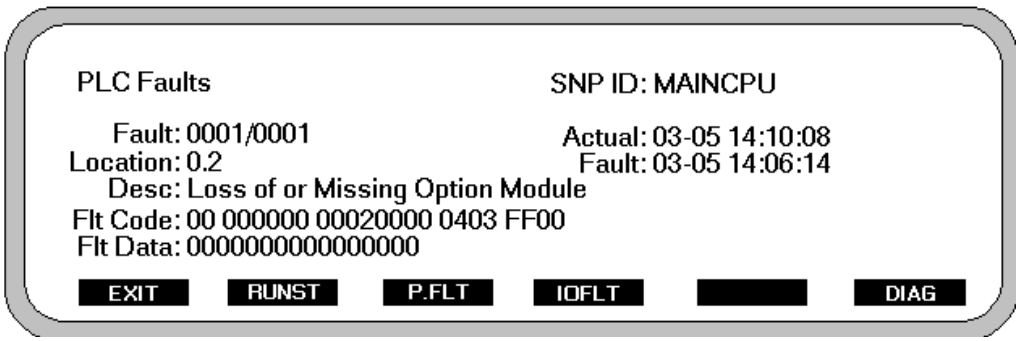


Figure 6-6. PLC Faults Log

Information is presented as follows:

Fault lists the displayed fault number out of the total number of faults registered in the system.

Location gives the rack and slot that reported this fault.

Desc provides a short text description of the problem.

Actual shows the current time in the PLC.

Fault provides the time stamp of the reported fault. Since the PLC clock may not be synchronized with the Datapanel, these entries can be significantly different from the Datapanel time and/or the current time of day.

If DIAG is pressed, the Fault Code and Fault Data lines appear. These provide more detailed fault codes that can be referenced n GE-Fanuc literature or with technical support.

Other function keys at the bottom of the screen include: RUNST, which changes to the Set PLC State page; IOFLT, which changes to the I/O Faults page; and EXIT, which returns to the MODE screen. If write privileges are enabled, the fifth function key will be labeled CLEAR. Pressing it will clear the PLC fault log in the PLC. If the PLC is password protected, the user will be prompted for a Level 2 SNP password.

I/O Fault Screen

The I/O Fault Screen displays the I/O Faults log in the PLC.

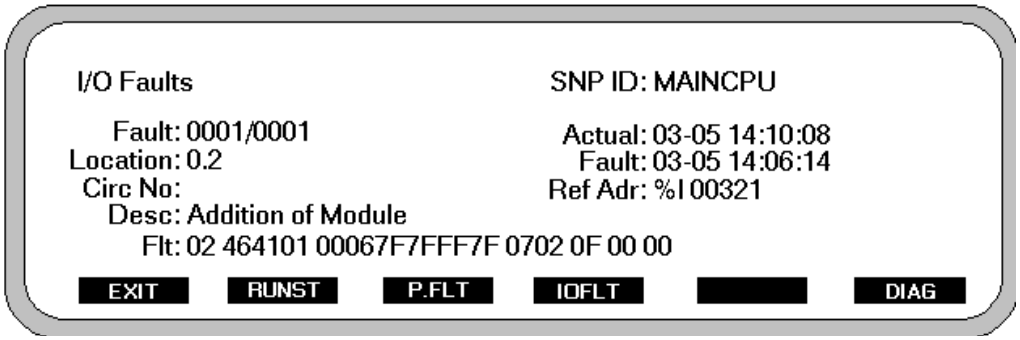


Figure 6-7. PLC I/O Faults Screen

The fields are similar to those in the PLC Faults screen.

Circ No is the point on a multi-point card, such as digital input 4 of a 16-pt module. Reference address provides the PLC table mapping of the card.

Set PLC State

This screen allows the user to view and modify the PLC's run-state.

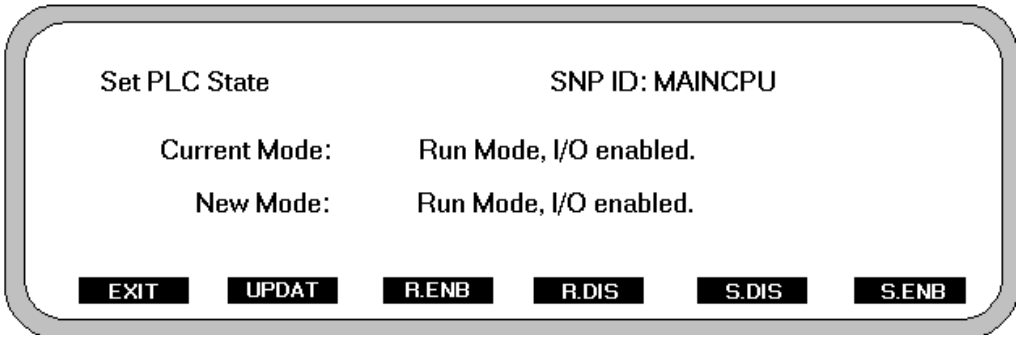


Figure 6-8. PLC Run/Stop Mode Screen

Current Mode states the present mode of the PLC. New Mode will change to reflect the last button the user pressed from four mode options.

R.ENB will change the new mode to Run Mode, I/O enabled.

R.DIS (only available for certain PLC models) will change the new mode to Run Mode, I/O disabled.

S.DIS will change the new mode to Stop Mode, I/O disabled.

S.ENB will change the new mode to Stop Mode, I/O enabled.

UPDAT is only available if write permissions have been set in the PC Configuration tool. Pressing update will attempt to change the current mode to the new mode selected. If the PLC is password protected, the user will be prompted for a Level 2 SNP password. Successful operation is marked by the current mode changing to the new setting.

EXIT returns to the PLC or I/O Fault screen.

Off-Line Mode

The **Off-line** mode enables the operator to configure the communications port, set the date and time, load databases and protocols, and enable or disable alarm checking. When the Off-Line option is accessed, all controller communications and alarms are inactive and the mini alarm log is not displayed. The real time clock is not displayed but is running as a background task.

This function is usually password protected at the time of configuration. If so, when Off-Line is attempted, a prompt is displayed asking for the password. The correct password must be entered in response to the prompt. An incorrect password aborts the attempt to go off-line.

Press **OFF-L** to go off-line and display the Off-Line Mode menu shown in Figure 6-9. When finished, Press **EXIT** to return to the main Mode menu. The system will revert to the main Mode Menu but will remain Off-line until Run Mode is accessed by pressing **EXIT**. The clock and the mini alarm log will again display.

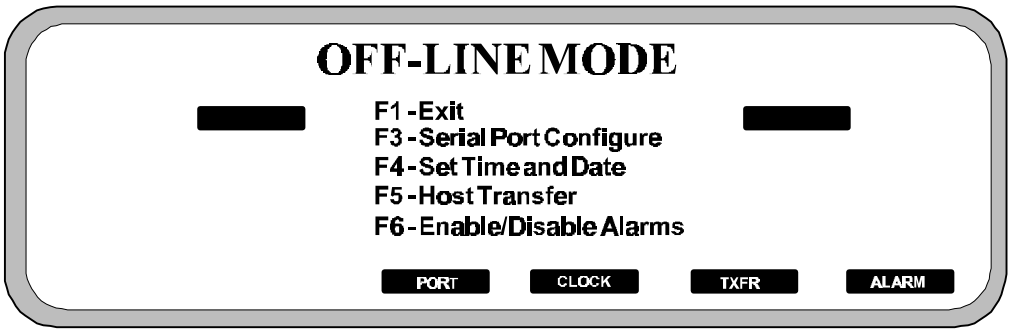


Figure 6-9. Off-Line Mode Menu

Serial Ports Configure

Press **PORT** to display the Set Communications Ports Menu. This option also enables the display and modification of the configured settings for Port COM1 and Port COM2, if present. When finished, press **EXIT** to return to the Off-Line Mode menu.

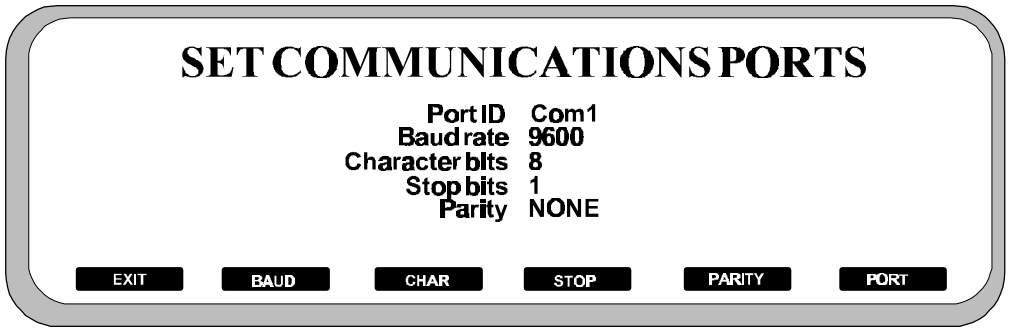


Figure 6-10. Set Ports Menu

Press **PORT** to toggle between COM1 and COM2 to select the desired port. (Model 160 only)

Press **BAUDRATE** repeatedly to scroll through the available baud rates to select the desired rate.

Press **CHAR BITS** repeatedly to toggle between 7 and 8 to select the desired number of character bits.

Press **STOP BITS** repeatedly to toggle between 1 and 2 to select the desired number of stop bits.

Press **PARITY** repeatedly to scroll through the available parity choices to select the desired parity.

Press **EXIT** to return to the Off-Line Mode menu.

Set Time and Date Display

Press **CLOCK** to display the Set Clock menu.

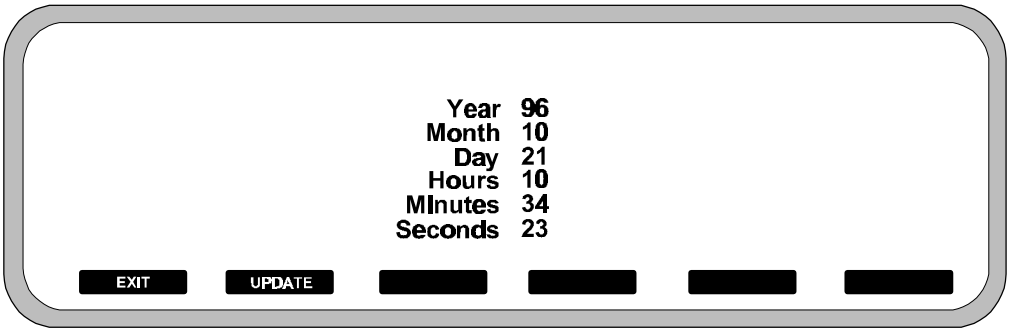


Figure 6-11. Set Clock Menu

Press the up-down arrow keys (▲ ▼) to move from field to field on the display. Using the numeric keypad, type in the desired values for the field, press ↵.

Press **UPDATE** to confirm the entries, update the clock, and return to the main Off-Line Menu.

Press **EXIT** to abort the option and return to the main Off-Line Menu without changing the clock settings.

Host Transfer

Press **TXFR** to access the Host Transfer display and enable data transfer between the Datapanel and the configuration software PC. To exit the transfer, press **ABORT**

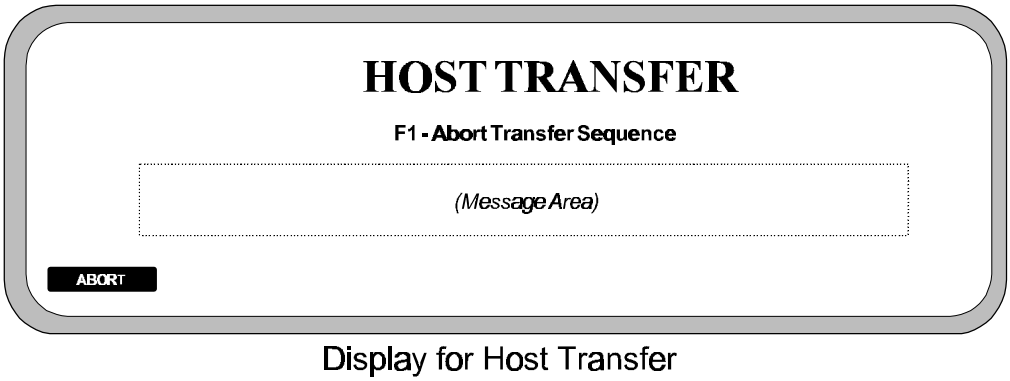


Figure 6-12. Host Transfer Display

The actual transfer of the data is under the control of the PC. The following messages will be displayed in the message area of the display:

When downloading a Protocol:

Loading Communications Protocol ...
and on the same line when complete, **Protocol installed.**

When downloading a Database:

Loading Database ...
and on the same line when complete, **Database installed.**

When uploading a Database:

Uploading Database ...
and on the same line when complete, **Database transferred.**

When a communications error occurs:

Transfer Failed

Enable/Disable Alarms

Press **ALARM** to access the alarm option. The label of one of the F-keys will change to **ENABLE,** another will change to **DISABLE**. Press **ENABLE** to enable alarms. Press **DISABLE** to disable alarms. Press **EXIT** to return to the Off-Line Menu. This option is useful to prevent excessive alarm logging during periods of operation with known process discrepancies or during process testing.

Chapter 7

Specifications

Hardware Specifications

Display

Text can be displayed in a variety of sizes by changing the height and width of the text. The default size is displayed with a height and width of 1 x 1 (see table below for pixel relationships). This can be increased so that text of 6 x 6 size can be configured. Two lines of the display are reserved for system use. The top line displays the date and time and any communications errors. The bottom line displays descriptive text for the function keys. The display area and display characteristics of the models in the Datapanel Range are specified in Table 7-1.

Table 7-1. Display Area and Characteristics

Features	Models 150, 160
LCD Display Size (pixels) (mm) (in.)	240x64 124 x 35 mm (4.88 x1.38 in.)
Display capability with minimum text size	40 char 6 lines
Minimum Text Size (pixels)	6w x 8h

Backlight

The backlight type is given in Table 7-2. The backlight of the display can be switched ON or OFF on all models in the Datapanel Range. Operation of the backlight is defined during configuration by the configuration software. In addition, the operator can control the backlight using the membrane key pad.

Table 7-2. Backlight Type

Features	Models 150, 160
Backlight	LED

Keypad

All Datapanels incorporate built-in membrane keypads with audible feedback. The keypad information is described in Table 7-3.

Table 7-3. Keypad Characteristics

Features	Models 150, 160
Function Keys per Page	Six
Data Entry Keypad	22 keys
Touch Screen	No

The top row of keys are the function keys required for the operation of the system. They match the keys displayed on the bottom line of the display. The remaining keys on Model 160 enable the input of numerical values. The Backspace key is used to edit keyboard entries before pressing Enter.

LED Indicators

The front panel contains 4 LED indicators. From left to right, these are: Power, Status, Receive, and Transmit.

Technical Specifications

The technical specifications are given in Table 7-4.

Table 7-4. Technical Specifications

Features	Model 150	Model 160
Processor	AMD AM188EM-20 MHz	NEC V20-10MHz
Memory, Flash	512KB Flash	512KB Flash
Memory, SRAM or DRAM	128KB SRAM	128KB SRAM
Database Size	64k	64k
Serial Ports	1 RS232/485	1 RS232/485 1- RS232
Additional Ports	No	No
Alarm Contact	No	No

Electrical Specifications

Note

Power lines should be kept short to minimize inductance. High inductance (greater than 1mH) in the power lines or DC power supply may cause the Datapanel to not power properly.

Power Requirements

Caution

The Datapanel product is a low power Class 2 circuitry device. Input power exceeding 35V may cause permanent damage.

The power requirements are given in Table 7-5. The steady state current consumption of the Datapanel is dependent on the supply voltage. At power-up, the Datapanel briefly requires a larger current to operate correctly. To ensure correct power-up, the external power supply must be able to provide a current of at least 1 A, irrespective of the supply voltage.

The power for the Datapanel can be supplied either through the 4-pin power connector or through pins 14 - 17 on the 25-pin connector. However, pins 14 - 17 are intended only as a secondary power input option for end-users wishing to supply power from the controller. It is recommended that power be supplied via the dedicated input connector.

The power input for the Model 150 is DC. Correct polarity must be observed. If the polarity is backwards, the unit will not be damaged but will not powerup.

Table 7-5. Power Requirements

Features	Model 150	Model 160
Power Input	10-35VDC (600 mA @10VDC) (Correct polarity must be observed.)	12-35VDC, 24V AC (750 mA @12VDC)

Ports and Pinouts

Ports and Pinouts for the Datapanel Models 150 and 160 are shown below.

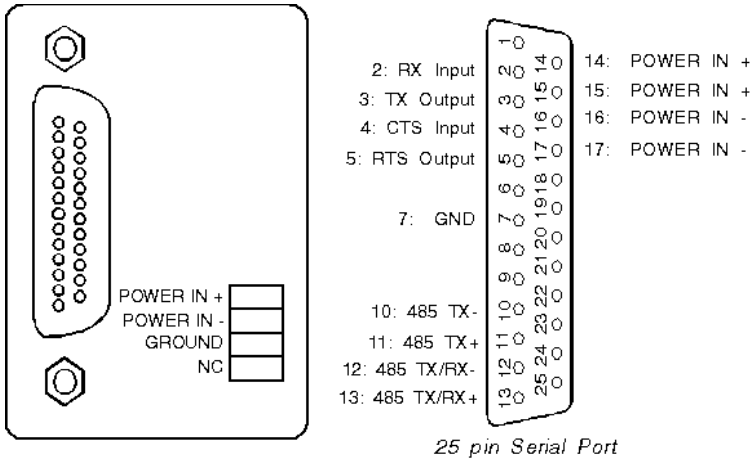


Figure 7-1. Model 150 Ports and Pinouts

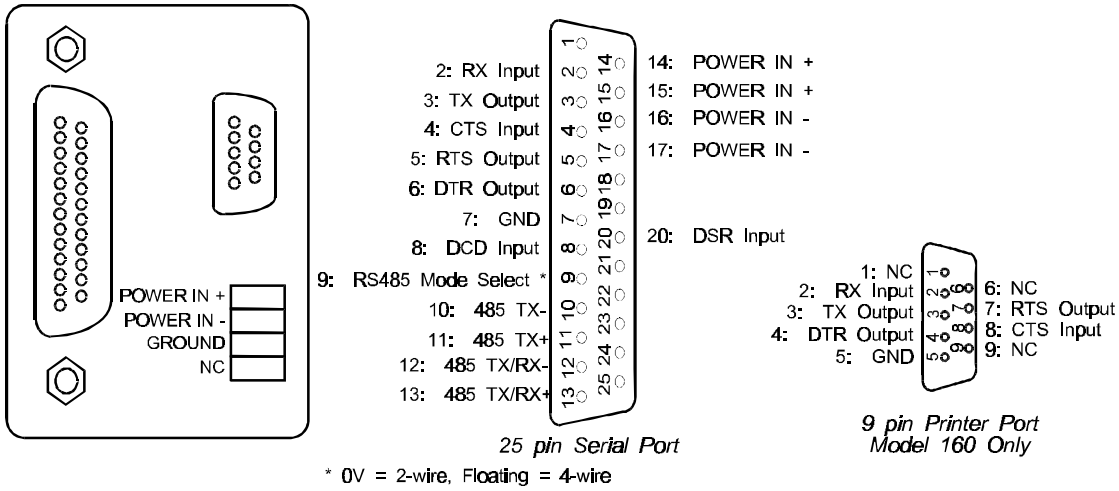


Figure 7-2. Model 160 Ports and Pinouts

Data Retention

Data retention characteristics are given in Table 7-6.

Table 7-6. Data Retention Characteristics

Model 150	Model 160
No backup is provided. The System Software, protocols and database are all stored using the 512 kbytes of Flash memory.	Backup is provided for SRAM by the use of a lithium energy cell integrated within the Real-Time Clock circuit (not user replaceable). The System Software, protocols and database are all stored using the 512 kbytes of Flash memory.
	Battery Life Typical: 10 years Worst: 5 years The battery life figures constitute total `off-time'. For a Datapanel powered on half-time, the worst battery life figure would be at least 10 years.

Real-Time Clock

Real-time clock characteristics are given in Table 7-7.

Table 7-7. Real-Time Clock Characteristics

Datapanel 150	Datapanel 160
None	Real-Time clock standard

Environmental Conformity

Environmental conformity is given in Table 7-8.

Table 7-8. Environmental Conformity

Features	Model 150	Model 160
NEMA, UL, CUL, CE	4/4X/12 UL (Class 1, Div 2), CE	4/4X/12 UL (Class 1, Div 2), CE

All models in the Datapanel Range are designed to satisfy the requirements and conditions of the following specifications. All units in the Datapanel Range remained operational when tested for temperature, humidity and vibration to the specifications shown in Table 7-9.

Table 7-9. Test Specifications

	Datapanel 150	Datapanel 160
Temperature	Operating Temp. 0 to +60 °C Storage Temp. -20 to +70°C	Operating Temp. 0 to +50 °C Storage Temp. -10 to +60°C
Humidity	5 to 85 % non-condensing	5 to 85 % non-condensing

Networking with Datapanels

Models 150 and 160 can be configured to network to a number of controllers on an RS-485 network, providing only one Datapanel is acting as communication master on the network. More than one Master on a network cannot be used. The controller must also be operating on the network.

Appendix A Error Codes

Standard Comms Block Error Codes

101	Timeout
102	Checksum Received Error
103	Bad Character Received Format Error
104	Bad Message Framing Error
105	Bad Message Format Received
106	NAK Response Received
107	Comms Block Format Error
108	Invalid Command

System Error Codes

29	More than 8 page-activated comms blocks activated by the page.
120	Tag Conversion error - unreasonable limits configured in an Analog Tag Record.
121	No Comms File.
122	No Comms Blocks.
123	Invalid Comms Block Time base.
124	Invalid Comms Block Type.

Controller Errors

If any errors are displayed which are not listed in the above tables, reference should be made to the configuration software Help system or to the controller documentation.

Appendix B Cabling Diagrams

The following figures present cable diagrams for Datapanel 150 and 160 RS485 connection to the Series 90 RS485 CPU port.

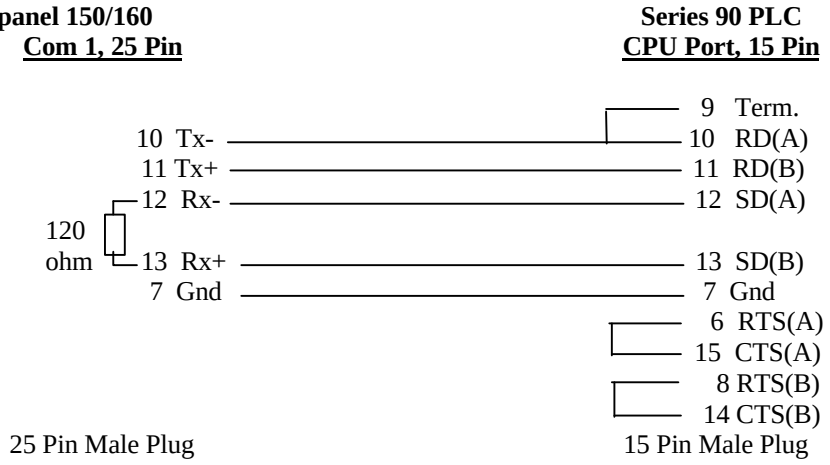


Figure B-1. Datapanel 150/160 – Point-to-Point RS485 NonMultipdrop Cable Diagram

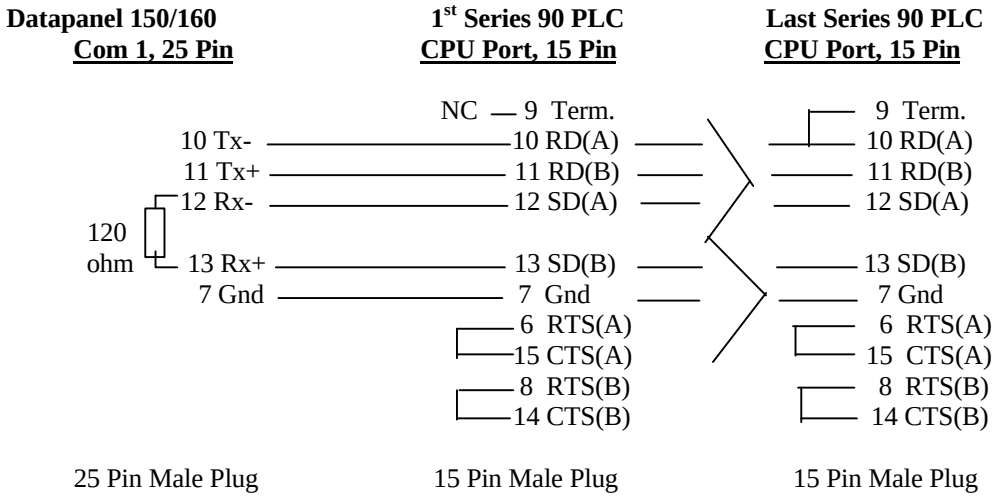


Figure B-2. Datapanel 150/160– RS485 Multipdrop Cable Diagram

Appendix C Glossary

ACK	See Acknowledgment.
Acknowledgment	The action taken by the user to indicate the acceptance of the information presented by the system.
Alarm	An abnormal situation detected by the system, e.g., the violation of predefined limits by an input variable from the plant.
Alarm Limits	Limits set at the time the Datapanel was configured.
Alphanumeric	Alphabetic and numeric characters only.
Alphanumeric Display	A display of alphabetic and numeric characters only.
Analog	The characteristic of being able to take on any of a continuously variable range of values.
Analog Tag	An identifying name for an analog variable. See also Tag.
Analog Variable	A term used to describe a 16-bit integer, 32-bit integer, or floating-point number which may take many values.
ANSI	A character set optimized for the support of the French, German and Scandinavian characters.
Application Program	A user-defined program written to perform specific actions in addition to the system software functions.
Area Coloring	The coloring of a defined display area with a defined color.
ASCII	American Standard for Computer Information Interchange. Defines what numeric codes are used to represent numbers, punctuation and letters of the alphabet.
Attributes	The characteristics assigned to a graphic element such as: Blink, Position, Color.
Background Color	That part of the display that appears not to change as contrasted with a bar graph which changes with the value of the displayed parameter.
Backup	To copy and store data as a precaution against loss or damage. Also, the copy so created.
Bar Graph	A filled rectangular area whose height or horizontal length changes in proportion to a variable.
Baud, Baud Rate	User-configurable rates at which communication takes place between the system and the controller.
Bit	A binary value of 0 or 1. An area of memory dedicated to storing a binary value.
Bit Table	An area of memory dedicated to storing multiple bits.
Bitmap	A file that stores a graphic image in terms of bits. These bits are mapped to the screen to create the image.
Blinking	The effect created on a portion of a graphic which will allow it to change between two defined states at a specific rate.
Boot	
Browse	Scanning data in order to locate a required item.

Byte	A group of 8 consecutive bits.
Commands	Information sent from the Datapanel to the controller to control or modify the plant process.
Comms Block	See Communications Block.
Communications Block (Comms Block)	A group of user configured information describing a particular communications operation between the Datapanel and the controller.
Communications Protocol	The "language" to be used when the system communicates with a controller. It contains the rules used to establish contact, receive/transmit data, detect transmission errors, etc.
Configure	To set up the display system in accordance with the needs of a particular user. This includes user-specific displays, alarm criteria, etc.
Contiguous	A group of items stored in adjacent locations.
Controller	An industrial device that handles the Input/Output of plant voltages and signals, e.g., a Programmable Logic Controller.
Data	Information relating to the operation of the plant process.
Database	A structured set of data. In the Datapanel, databases are configured to customize the product to satisfy the needs of the user.
Datapanel	A self-contained, solid-state industrial display system incorporating its own display screen and keypad.
Datapanel Address	The Datapanel Register or Bit Table address to or from which data is to be transferred.
Digital	The characteristic of being able to take on only one of two possible states or conditions.
Digital Tag	An identifying name for a digital variable. See also Tag.
Download	Transmitting data from the configuration tool to the Datapanel.
Drive Out	The capability of the Datapanel which allows it to send information to the controller.
Drop-Down	A menu or list which appears in Windows upon selection of a menu item.
Dynamic	Any data element (tag value, graphic item, etc.) that can have changing values.
Firmware	Software (database, applications) stored in non-volatile memory, e.g., EPROM.
F-Key	See Function Key.
Flash memory	See Firmware.
Function Key	A key on a keyboard or keypad whose function is determined by software and may vary depending on the state of the software. Current definitions of the Datapanel function keys are displayed on the screen.
HMI (Human-Machine Interface)	Device enabling the two way transfer of data between a human and machine.
Host	Device on which the controlling software is resident.
I/O	See Input/Output.
Import	The ability to transfer configuration information into the Datapanel configuration tool from another application like a spread sheet.
Input/Output	A general expression for the input and output of binary data to or from a device.
Keyboard	A collection of physical keys used by the user to communicate with the computer system.
Keypad	An operator keyboard with a reduced number of keys, e.g., numeric and/or function keys.
LED	Light Emitting Diode. Typically used as a status indication light.
Macro	A collection of graphic elements used repeatedly thereafter in subsequent displays. This graphic application of the term differs from a macro instruction, a collection of instructions or program statements which can be activated collectively.
Master	The device controlling network communications.
Membrane	A continuous film intended to protect a device from the ingress of dust or liquid.

Mimic	A display which factually represents the plant. It provides the status of each displayed plant item. Mimics may be shown on monitors or wall displays.
Mini-Alarm Log	One of the Alarm area displays available when using the Datapanel. This display is found on all the Run Mode displays in the upper part of the screen.
NEMA	National Electrical Manufacturers Association. A group which sets American standards for enclosures which protect electronic equipment from the adverse affects of liquids, ingress of dust and physical shocks. Also, the standard created.
Network	An interconnected group of communicating devices.
Off-line	A condition where run time operations are suspended, so that system settings can be changed.
On-line	The system is communicating to external devices with dynamic data being updated.
Operator	The person who uses the system for its practical purpose such as to interface with the plant process. Not necessarily the one who configured the system. See also User.
Overview Group	A set of tags configured to be displayed together.
Page	One of 100 user configurable displays on the Datapanel.
Parallel	A data transfer mechanism using multiple transfer paths.
Parameter	A value set when the system is configured.
Parity	The means of checking the validity of a data character.
Password	A code used to show the authority of the user to gain access to various sensitive features of the system. For example, changes to the display design would normally be password-protected to guard against changes by unauthorized users.
PC	IBM Personal Computer or any computer generically similar.
Pixel	The smallest picture element of a display surface that can be independently assigned a color or intensity.
Plant Process	A series of actions or treatments designed to produce a desired end under the control or monitoring of a PLC or other intelligent controller.
PLC	Programmable Logic Controller.
Process	See Plant Process.
Process Variable	A variable parameter of the production process.
Programmable Logic Controller	An industrial device that handles the Input/Output of plant voltages and signals.
Protocol	The format, structure and procedure required to communicate with a controller.
RAM	Random Access Memory.
Ramp Drive-out	Pre-configured analog drive-out (Tag/Register) with a specific increment/decrement value.
Raw Data	Data read from the controller before being scaled into engineering values.
Real-Time Data	Current data.
Register	An internal memory location used for storing 16-bit representation of analog data in the Datapanel or controller.
Remote Address	The register or bit table address in the controller to or from which data is to be transferred.
Run Time	The operating state of the system. See also On-line.
Scaled Data	Raw data whose value has been modified to conform to prescribed engineering units.
Serial	A data transfer mechanism using a single transfer path.
Slave	The device which responds to a master over a network.
System Register	Same as any other register (see Register) but reserved for use by the system and cannot be modified by the user..
Tag	An analog or digital variable held in the Datapanel, usually representing an analog or digital variable in the controller. Includes additional information such as a name, size of the controller variable, scaling factors, alarm limits, etc.
Tag Record	An area of the database containing the information for a particular tag.

Tag Table	A group of Tag Values in the Datapanel.
Tag Value	The current value of the tag. This may be a scaled engineering value associated with the Tag Record.
Toggle	The action of inverting the value of a two-state item, such as a bit or a two-state digital tag.
Toolbar	A group of icons which provide easy access to other windows, menus or operations.
Touch Region	An area of the screen dimensionally defined to produce a program response when touched or pressed.
Trend	The graphical display of a variable in the form of a trace drawn with reference to X and Y coordinates.
Upload	Database transfer from Datapanel to WinCfg.
User	The person using WinCfg to configure a Datapanel. See also Operator.
Data Designer	A Windows-based tool for configuring Datapanels.