Honeywell

UMC800 User Utility User's Guide

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1/01

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About This Document

Abstract

The **"Control Builder" configuration software** program is used for UMC800 Controller and Operator Interface configuration and operates on a Windows '95™- or Windows NT-based PC. The software program uses graphic symbols and line drawing connections to create custom control strategies. Menus are provided in the software to allow selection of screens for the operator interface and to customize screen access methods and operator keys. Completed configurations are loaded into the control system using a dedicated communication port in the controller.

References

The following list identifies all documents that may be sources of reference for material discussed in this publication.

Document Title	Doc ID
UMC800 Controller Technical Overview	51-52-03-24
UMC800 Controller Installation and User Guide	51-52-25-61
UMC800 Operator Interface User Guide	51-52-25-62
UMC800 Control Builder Function Block Reference Guide	51-52-25-64
UMC800 RS232 Communications Manual	51-52-25-76
UMC800 Modbus® Communications Manuals	51-52-25-87

Contacts

World Wide Web

The following lists Honeywell's World Wide Web sites that will be of interest to our customers.

Honeywell Organization	WWW Address (URL)
Corporate	*http://www.honeywell.com*
Sensing and Control	*http://www.honeywell.com/sensing*
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United States and Canada	Honeywell	1-800-423-9883 1-888-423-9883 1-800-525-7439	Tech. Support Q&A Faxback (TACFACS) Service
Asia Pacific	Honeywell Asia Pacific Hong Kong	(852) 2829-8298	
Europe	Honeywell PACE, Brussels, Belgium	[32-2] 728-2111	
Latin America	Honeywell, Sunrise, Florida U.S.A.	(954) 845-2600	

Symbol Definitions

The following table lists those symbols that may be used in this document to denote certain conditions.

Symbol	Definition
⚠ DANGER	This **DANGER** symbol indicates an imminently hazardous situation, which, if not avoided, **will result in death or serious injury**.
⚠ WARNING	This **WARNING** symbol indicates a potentially hazardous situation, which, if not avoided, **could result in death or serious injury**.
⚠ CAUTION	This **CAUTION** symbol may be present on Control Product instrumentation and literature. If present on a product, the user must consult the appropriate part of the accompanying product literature for more information.
CAUTION	This **CAUTION** symbol indicates a potentially hazardous situation, which, if not avoided, **may result in property damage**.
	WARNING **PERSONAL INJURY:** Risk of electrical shock. This symbol warns the user of a potential shock hazard where HAZARDOUS LIVE voltages greater than 30 Vrms, 42.4 Vpeak, or 60 Vdc may be accessible. **Failure to comply with these instructions could result in death or serious injury.**
	ATTENTION, Electrostatic Discharge (ESD) hazards. Observe precautions for handling electrostatic sensitive devices
	Protective Earth (PE) terminal. Provided for connection of the protective earth (green or green/yellow) supply system conductor.
	Functional earth terminal. Used for non-safety purposes such as noise immunity improvement. NOTE: This connection shall be bonded to protective earth at the source of supply in accordance with national local electrical code requirements.
	Earth Ground. Functional earth connection. NOTE: This connection shall be bonded to Protective earth at the source of supply in accordance with national and local electrical code requirements.
	Chassis Ground. Identifies a connection to the chassis or frame of the equipment shall be bonded to Protective Earth at the source of supply in accordance with national and local electrical code requirements.
	Earth Ground. Functional earth connection. NOTE: This connection shall be bonded to Protective earth at the source of supply in accordance with national and local electrical code requirements.
	Chassis Ground. Identifies a connection to the chassis or frame of the equipment shall be bonded to Protective Earth at the source of supply in accordance with national and local electrical code requirements.

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1. Overview

1.1 Using This User Utility

This User Utility software program allows you to perform a variety of tasks for configuring and monitoring UMC800 controller operation. The utility program gives you the ability to create, edit, save, open and download individual recipe, profile, setpoint schedule and data storage files.

Using the utility on-line, you can calibrate I/O modules, download and upload controller configuration files, as well as set the controller's communication port parameters, monitor controller diagnostics, and other tasks.

Remote controller access via dial-up modem is available via the communication setup. An external modem is required at the controller and is connected to the standard RS232 configuration port. Remote access functions include on-line monitoring, configuration upload and download.

Figure 1-1 shows the Main Window of the user utility. All utilities are accessed through the drop-down menus along the top of the window and the buttons within the main window.

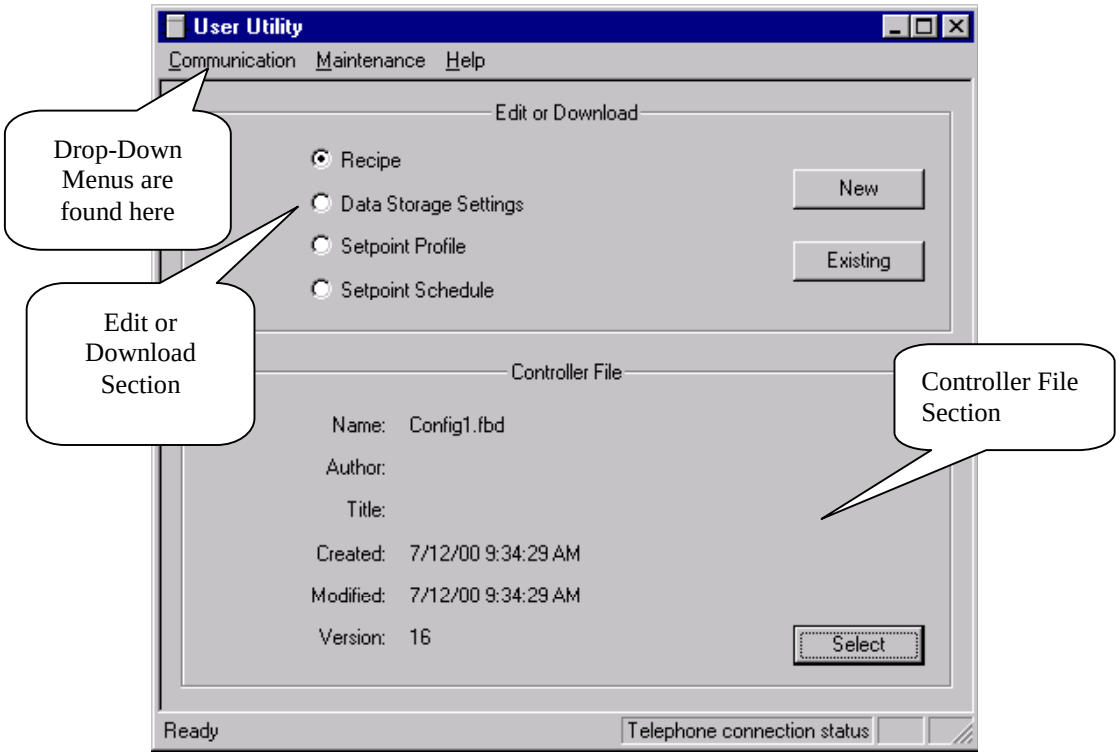


Figure 1-1 Main Window

Program File Configuration

With this User Utility program you can create and or edit various program files for digital and analog process operations. Namely, these files include recipes, setpoint programs (profiles), setpoint schedules and data storage settings. The files are configured in two ways:

1. Off-line – On a PC running the user utility, the files are created or edited and then saved to a floppy disk. The disk is then inserted into the operator interface disk drive where the files can be loaded into the controller for use.
2. On-line – The PC is connected directly to the controller's communications port. Then, program files are created or edited using the utility and downloaded directly into the controller for use.

Communications Port Setup

The user utility allows you to set up the communications port(s) of the controller to match your communications. This operation is performed on-line, (with the PC connected directly to the controller's communication port). From the user utility's main window, dialog boxes under the Communication and Maintenance menus you can set the parameters for RS 232 and optional RS 485 serial communications ports.

Analog Input and Analog Output Module Calibration

The controller I/O modules are factory calibrated to 0.1 % accuracy. But if greater accuracy is required, you can perform calibration of the AI and AO modules using the user utility on-line connected to the controller. Calibration menus are found under the Maintenance pull-down menu. See Section 9 in this guide or use the online help for the calibration procedures.

Other On-Line Utilities

Under the Communication and Maintenance pull-down menus various other utilities are available:

- Controller Diagnostics – Diagnostic Summary
  – I/O Module Diagnostics
  – Modbus Communications Diagnostics
- Communications Diagnostics – Remote Loopback
  – Error Statistics
- Set Controller Time
- Download Controller File
- Upload Controller File
- Download Controller Code

Sections 8 and 9 of this guide describe how to use these utilities.

ATTENTION

The User Utility software contains task-oriented information for using any of the utilities in this program. Help topics are accessed under the Help menu in the main window dialog. See Section 10 for more information on using the various on-line help features.

1.2 Specifications – Hardware and Software Requirements

To use this user utility, the following hardware and software requirements are necessary.

Table 1-1 Hardware and Software Requirements

Specification	Description
PC Requirements	The User Utility operates on any computer platform that meets the program's minimum specification requirements. **CPU:** 80486, 66MHz **Operating System:** Windows 95 Windows 98 or Windows NT **Display Color:** VGA or greater screen resolution **Pointing Device:** Mouse, Trackball or compatible device **RAM:** 16MB Minimum (Windows 95) **Floppy:** 3.5 inch, 1.44- megabytes **Ports:** Dedicated RS-232
System Interconnection	Connected to the controller through its dedicated RS-232 Port. (COM1 - COM4) **Maximum Distance between Controller** **File and PC:** 50 Feet **Cable Type:** Standard 9 Pin RS232 **Cable Termination:** 9-pin "D" connector
Configuration	**Off-line** configuration **On-line** loading, calibration, and controller diagnostics
Modem	*PC Interface:* Supports Microsoft Windows Telephony API (TAPI) device independent modem communications. Baud rate = 9600. *Controller Interface:* Connects to the controller RS-232 configuration port. *Some commercially available modems with equivalent specifications to those validated should function with the UMC800 controller.* The following modems have been validated: 3COM US Robotics 56K Data/Fax External Modem, Zoom 56K Dualmode External Modem, Best Data 56SX Data Fax External Modem, Sixnet VT-MODEM Industrial External Modem.

2. Installation

2.1 Overview

Introduction

To install the **User Utility** software you must run the **User Utility Setup** program that is used to create all necessary directories, files, program groups and/or items. Setup also checks adequate resources, such as disk space and Windows operating system version.

ATTENTION

We recommend that you close any other applications you have running in windows since these can greatly increase the time for installing your user utility program.

2.2 Installation Procedure

Procedure

Follow the steps in Table 2-1 to load and install the User Utility program on your PC.

You install the User Utility program files from the CD-ROM.

Table 2-1 Installing the User Utility

Step	Action
1	Insert the User Utility CD into your CD drive.
2	Click on the "**Start**" button and select "**RUN**."
3	At the "**Run**" dialog box, Click on the "**Browse**" button and locate your CD-ROM drive. Click "**OPEN**".
4	Click on **"Setup.exe** and click "**OPEN**". Click **OK** on the "**RUN**" dialog box.
5	At the "**Welcome**" dialog box,. • Click "**Next**" to continue with the Setup Program or • Click "**Cancel**" to quit Setup
6	At the "**License Agreement**" dialog box, read the agreement then click "**NEXT**" to continue the Setup program.
7	At the "**Choose Destination Location**" dialog box, Setup will install the User Utility in destination folder **C:\Program Files\User Utility 5.0**, or you can install to a folder of your choosing. • Click "**Next**" if the destination directory is correct, or • Click "**Browse**" to open the "**Choose Folder**" dialog box and choose another folder, click OK, then click "**Next**".

Step	Action
8	At the "**Select Program Folder**" dialog box, you an type another folder name, or select one from the existing list.
9	The Program files will install and Setup will be complete. Click "**Finish**".

2.3 Starting the User Utility

Procedure

Follow the steps in Table 2-2 to start the User Utility program.

Table 2-2 Starting the User Utility Program

Step	Action
1	Click on "**Start**." Button.
2	Click on "**Programs**".
3	Click on "**User Utility 5.0**". The main window will be displayed.

2.4 Exiting the User Utility

There is no Exit option on any of the menus. Click on the X in the top right hand corner of the Main Window to close the User Utility. You may also use the key combination Alt + F4.

2.5 Connecting the PC to the Controller

Wiring Communication Links

The controller communicates through two serial ports located on the controller CPU module. One port is an RS232 interface for connection to a PC and the other is a dedicated port for connecting the operator interface. Table 2-3 shows the communication link connections from the PC to the controller.

NOTE: The optional RS485 Modbus® port does support all user utility operations, except for code download and set up COMM A port functions.

Table 2-3 Communication Link Connections from the PC to the Controller

Communication Link to . . .	Link Type	From Controller Port	Connect Cable *	To Port	Reference Data
PC or laptop	RS232	**Configuration** (9-pin "D" connector)	Up to 50 ft cable lengths *(Supplied by user)*	Serial port of PC	Null Modem cable, 9-pin Male/Female

*Honeywell can provide a 10 ft. cable: Order Part Number 51404751-001

3. Main Window

3.1 Overview

User Utility program file options and pull-down menus are accessed from the Main Window. This section provides a general overview of all parts of the Main Window with more detailed information for each given in later sections.

3.2 Opening a Controller File

A controller configuration file must be opened before attempting to use some User Utility functions. Controller configuration files are identified by the extension .fbd in their name. Figure 3-1 shows the User Utility Main Window with a Controller File opened.

ATTENTION

If you are working off-line, you can save (store) the controller configuration file to a floppy disk in the operator interface disk drive. The disk then can be loaded into the PC so that the controller configuration file can be opened in the user utility. See "Disk Utilities" in the *UMC800 Operator Interface User Guide* for instructions on storing controller configuration files to disk.

If you are working on-line, you can upload the controller configuration file directly by performing an Upload Controller File. The upload feature is found under the Communication pull-down menu.

To open a Controller File: Press "Select".

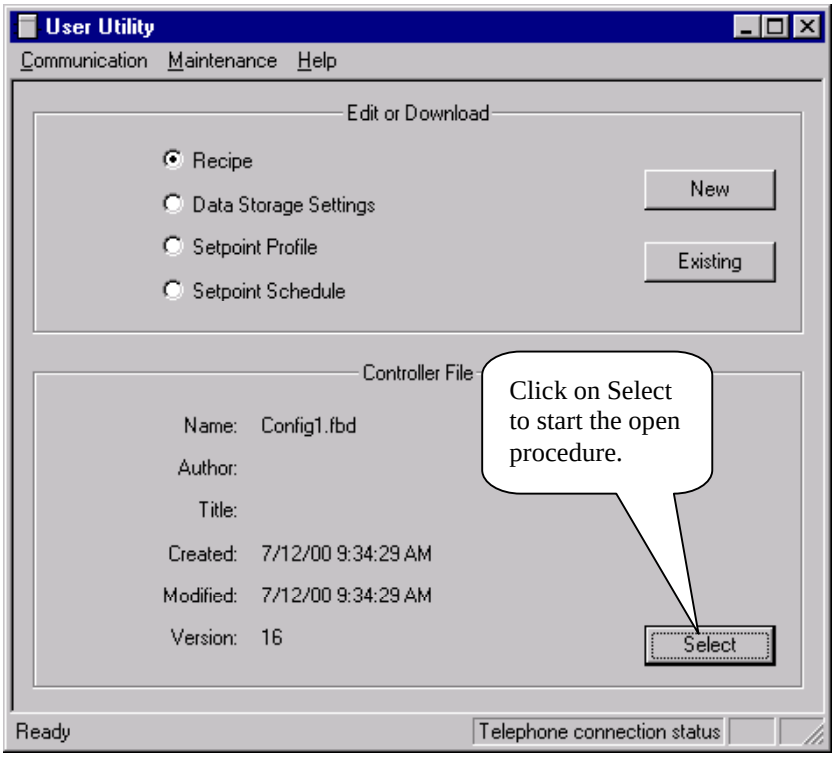


Figure 3-1 Main Window

Once the Open dialog box is displayed:

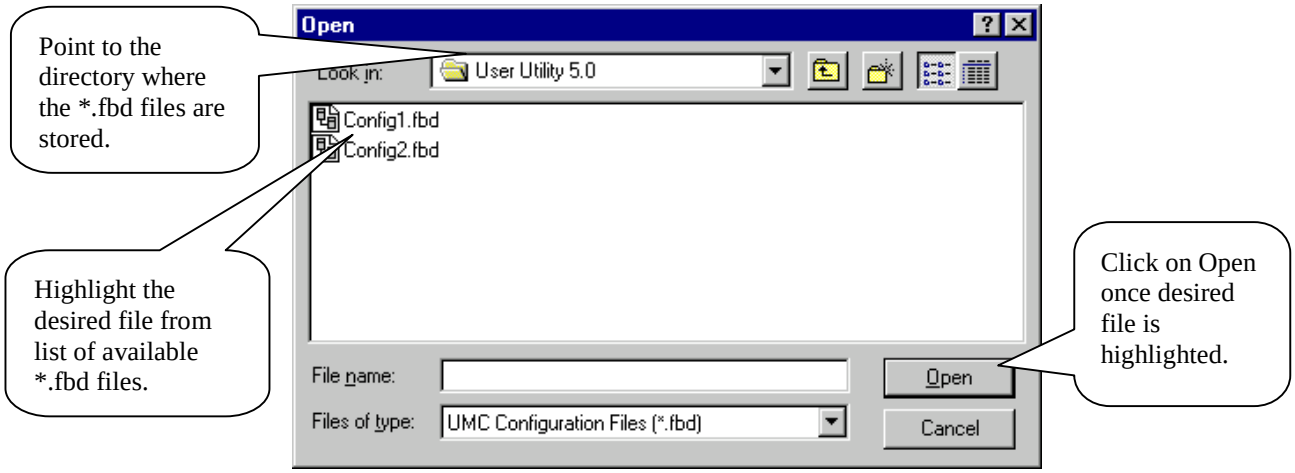


Figure 3-2 Open File Selection Screen

The highlighted file is then opened and the information about that file is displayed in the Controller File section of the Main Window. See Figure 3-1.

It is now possible to use all of the User Utility functions.

NOTE: A controller configuration file is required so the Recipe Edit or Data Storage Edit can obtain the variable and signal tag names used in the controller. On the other hand, setpoint profile and setpoint schedule functions **do not** need to have a controller configuration file open before editing or creating a profile or schedule, because setpoint profiles and schedules do not need knowledge of tag names used in the controller

You may use the pulldown menu items (other than Download) without opening a configuration file.

3.3 Editing, Creating and Downloading Program Files

The Edit or Download section of the main window (see Figure 3-1) contains a list of options for selecting the type of program files to access. You click on the radio buttons to select the file type and then click the appropriate button to open existing files or create a new file. Detailed information and procedures for editing/creating these files are found in later sections of this guide and in the on-line help topics under the Help pull-down menu in the main window. The following program file types can be accessed using the utility:

- Recipes (Section 4)
- Data Storage Settings (Section 5)
- Setpoint Profiles (Section 6)
- Setpoint Schedules (Section 7)

3.4 Communication Menu

The Communication Menu (see Figure 3-3) contains the following items:

- Setup
- Download Controller File
- Upload Controller File
- Remote Loopback
- Error Statistics
- Dial Modem
- Hang Up Modem

Each of these menu items will be discussed further in Section 8.

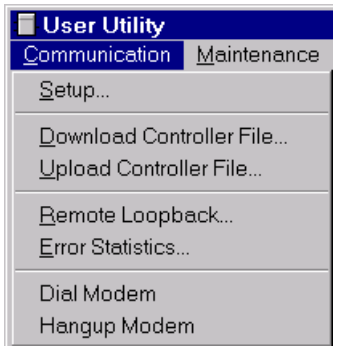


Figure 3-3 Communication Menu

3.5 Maintenance Menu

The Maintenance Menu (see Figure 3-4) contains the following items:

- Diagnostic Summary
- I/O Module Diagnostics
- Modbus Communications Diagnostics
- Set Controller Time
- Set Controller Comm A Port
- Set Controller Comm B Port
- Calibrate AI
- Calibrate AO
- Download Controller Code

Each of these items will be discussed in detail in Section 9.

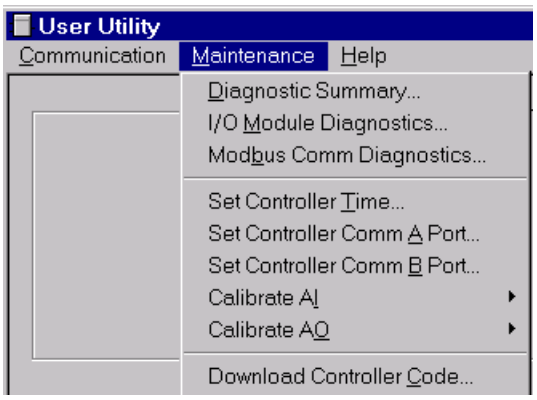


Figure 3-4 Maintenance Menu

3.6 Help Menu

The Help Menu (see Figure 3-5) contains the following items:

- Help Topics
- About

Each of these items will be discussed in detail in Section 10.

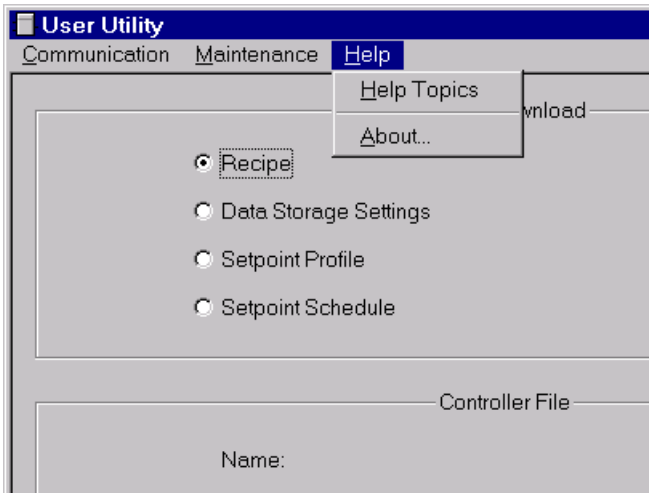


Figure 3-5 Help Menu

4. Edit or Download Recipes

4.1 Overview

Recipe files can be edited or new recipes can be created and then saved to disk. If you are working off-line, the recipes can be saved to a floppy disk for later downloading to the controller through the operator interface. If working on-line, you can save the recipes to disk and then download the files directly to the controller.

Recipe Files

Each recipe consists of 1 to 50 items/operator variable names and values (or settings), and carries its own name for identification. (The recipe name is a descriptive reference and uniqueness is not enforced. Unique names are recommended to avoid operator confusion). The selected operator variable names were assigned during the controller configuration.

A recipe is a list of items/variable names with settings that define the ingredients needed to make a product or run a particular batch. The items represent analog and/or digital operator points that were assigned in the function block configuration and are identified by their variable names. Recipes have these basic attributes:

- Recipe number
- Recipe name
- Recipe items/variable names
- Adjustable values

4.2 Editing an Existing Recipe

To edit an existing recipe.

1. Make sure a controller configuration file has been opened.
2. Click on the Recipe radio button in the Edit or Download section.
3. Click on the Existing button. The Open dialog is displayed. See Figure 4-1.

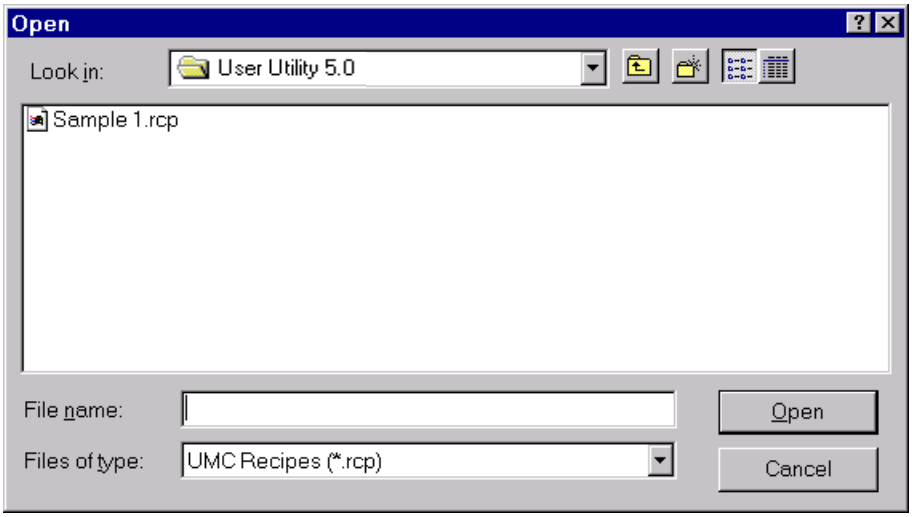


Figure 4-1 Open Recipe Dialog

4. Point the dialog to the directory where the recipes are stored.
5. Highlight the desired recipe.

   NOTE: Recipe files are identified by the file extension .rcp in the file name.
6. Click on Open. The Recipe Properties dialog is displayed showing the current recipe name.
7. Make sure the recipe has an appropriate name and click OK. The Edit Recipe screen is displayed. See Figure 4-2.

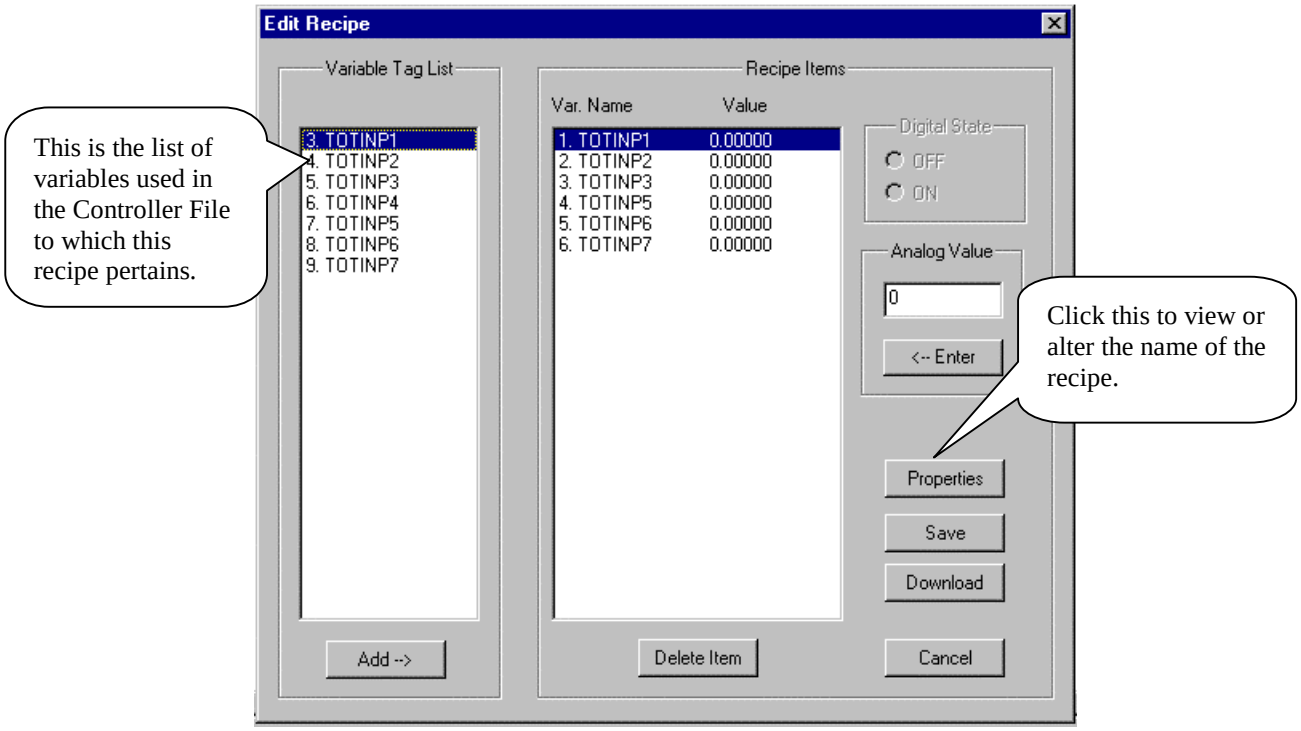


Figure 4-2 Edit Recipe Dialog

8. Make the necessary changes to the current recipe.

   - *To ADD a Variable to a Recipe:*
     Select a variable and click on Add. A variable number will appear under Recipe Items.
     - If it is an **analog variable**, the Analog Value field will be active. Enter a value and press "ENTER" on the keyboard or click on the ENTER key.
     - If it is a **digital variable**, the Digital State radio buttons will be active. Select ON or OFF as a digital state for the variable.
   - *To DELETE a Variable from a Recipe:*
     Select a **variable number** from the Recipe Items field, then click Delete Item.
   - *To Change the Name of a Recipe:*
     Click on Properties and type in the new name in the field.
9. When all changes have been made, click on Save. The Save As dialog is displayed. See Figure 4-3.

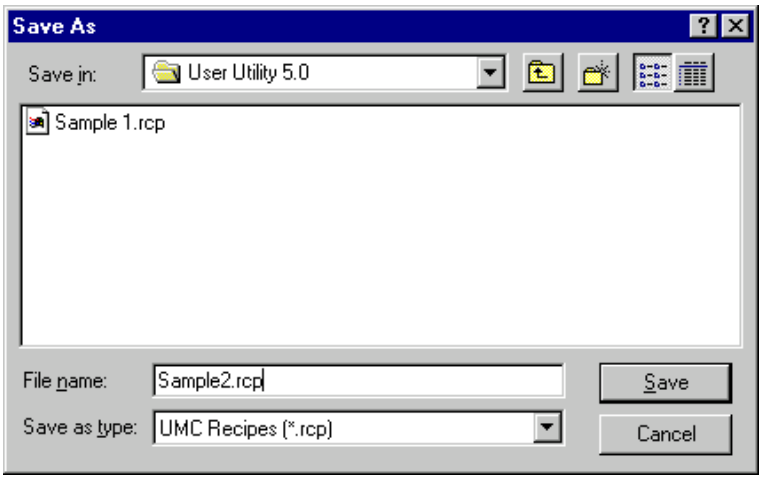


Figure 4-3 Save Recipe Dialog

10. Click on Save to overwrite the old version of the current recipe or
11. Type in a new name and then click on Save.

The recipe is now saved out to disk.

4.3 Creating a New Recipe

To create a new recipe:

1. Click on New. The Recipe Properties dialog is displayed. . See Figure 4-4

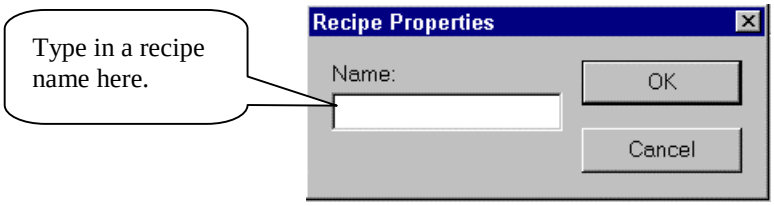


Figure 4-4 Recipe Properties Dialog

2. Type in a name for the current recipe and click on OK. The Edit Recipe dialog is displayed. See Figure 4-2
3. Create the desired recipe from the tags available.
   - *To ADD a Variable to a Recipe:*
     Select a variable and click on Add. A variable number will appear under Recipe Items.
     - If it is an **analog variable**, the Analog Value field will be active. Enter a value and press "ENTER" on the keyboard.
     - If it is a **digital variable**, the Digital State radio buttons will be active. Select ON or OFF as a digital state for the variable.
   - *To DELETE a Variable from a Recipe:*
     Select a **variable number** from the Recipe Items field, then click Delete Item.
4. When the recipe is complete, click on Save to write the recipe out to the PC hard drive or floppy disk.
5. When the Save As dialog is displayed, type in a file name for the new recipe and click on Save.

The recipe is now created and saved out to the disk drive.

4.4 Downloading a Recipe

ATTENTION

If you are working off-line, you can save the recipes to a floppy disk. The disk then can be loaded into the operator interface disk drive and downloaded into the controller for its use. See “Disk Utilities” in the *UMC800 Operator Interface User Guide* for instructions on downloading files to the controller.

If you are working on-line, you can download recipe files directly to the controller.

To download a recipe:

1. Make sure the PC is connected to the controller.
2. Click on the Download button on the Edit Recipe dialog. See Figure 4-2. The Download To dialog is displayed. See Figure 4-5.

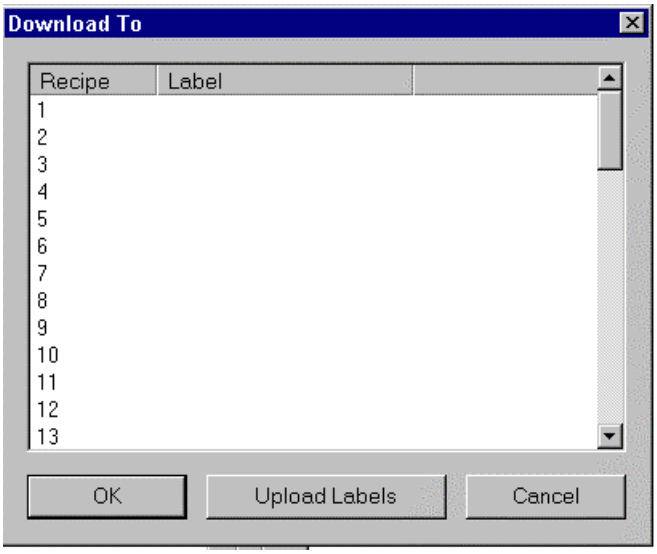


Figure 4-5 Download To Dialog for Recipes

3. Optionally, click on the Upload Labels button. All current recipe names will be uploaded from the controller
4. Select a number to download to and click on OK. The Download File dialog is displayed. See Figure 4-6.

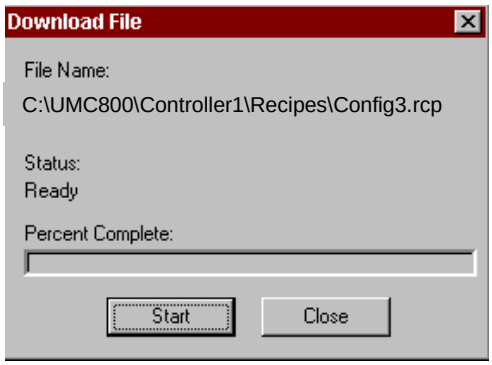


Figure 4-6 Download File Dialog

5. Click on Start and the recipe will be downloaded. The dialog shows the download status and percent complete as the download progresses.
6. When the Download Complete message is displayed (if download was successful), click on Close.

The recipe is now in the controller.

ATTENTION

Once a recipe is loaded into the controller's memory, it must be loaded from memory into the controller configuration where the recipe can be run. See "Load Recipe" in the *UMC800 Operator Interface User Guide* for instructions on loading recipes into the controller configuration.

5. Edit or Download Data Storage Settings

5.1 Overview

You can edit current settings (storage parameters) or create new settings for data archiving with the user utility. The data archiving feature allows you to store process information in files on a disk. Trend values, alarm and event information, and point logs can be saved to files for later analysis by an off-line computer equipped with Honeywell Data Analysis Software (SDA).

Some of the settings that you select determine the content of the information, the interval of time between sampling and storing information and the method of data storage.

If you are working off-line, the data storage set files can be saved to a floppy disk for later downloading to the controller through the operator interface. If working on-line, you can save the files to disk and then download the files directly to the controller.

5.2 Editing an Existing Setting

To edit an existing setting:

1. Make sure a controller configuration file has been opened.
2. Click on the radio button for Data Storage Settings.
3. Click on the Existing button. The Open dialog is displayed. See Figure 5-1.

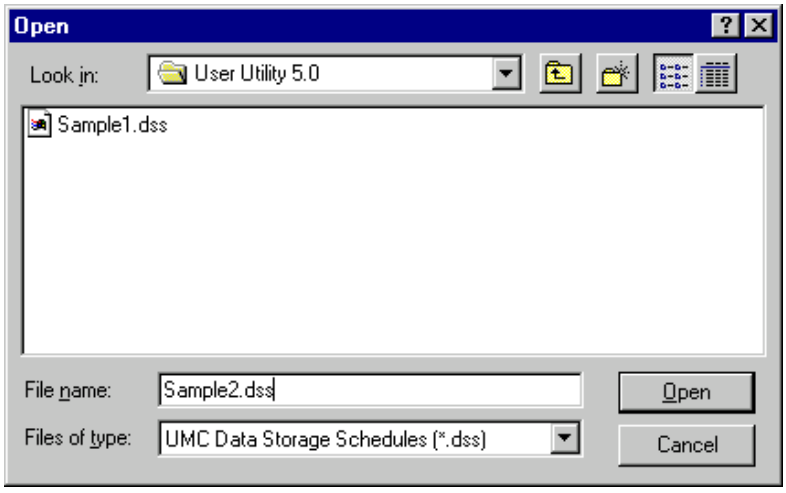


Figure 5-1 Open Data Storage Setting Dialog

4. Highlight the desired data storage schedule file and click on Open. The Data Storage Configuration dialog will be displayed. See Figure 5-2.

ATTENTION

Data Storage Set files are identified by the file extension .dss in the file name.

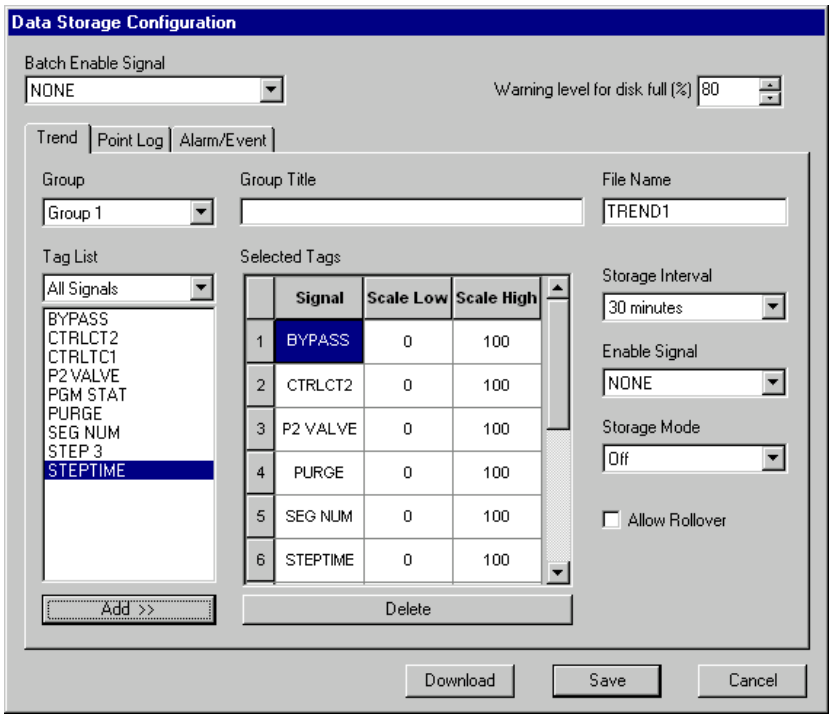
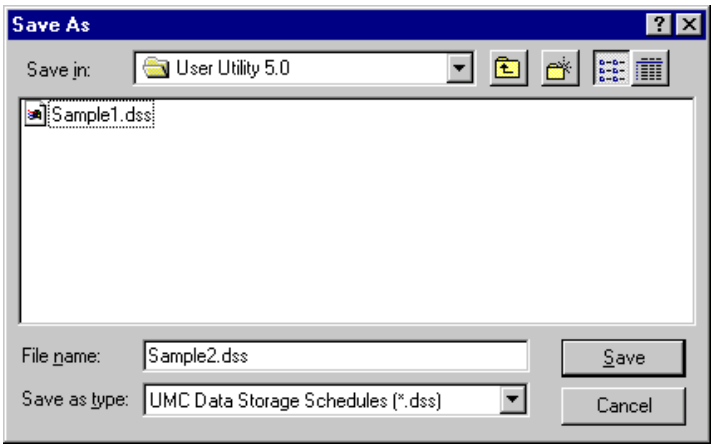


Figure 5-2 Data Storage Configuration Dialog

5. Enter and select parameters to edit data storage setting for the available data types. See 5.4 Data Storage Configuration Dialog for descriptions and the steps for entering all data storage parameters.
6. Once the edits have been made, you can save the setting to disk.
7. Click on Save. The Save As dialog is displayed. The file type automatically defaults to .dss.



8. If the current name and directory are satisfactory, click on Save, otherwise change the directory and/or the file name if desired.
9. Click on Save.
10. Click on OK to close the Data Storage Configuration dialog.

The data storage set file is now saved out to disk.

5.3 Creating a New Setting

To create a new Data Storage Setting:

1. Make sure a controller configuration file has been opened.
2. Click on the radio button for Data Storage Settings.
3. Click on the New button. The Data Storage Configuration dialog will be displayed. See Figure 5-2.
4. Enter and select parameters to create data storage setting for the available data types. See 5.4 Data Storage Configuration Dialog for descriptions and the steps for entering all data storage parameters.
5. Click on Save to create a file on the PC. The Save As dialog is displayed.
6. Select the desired directory and enter a file name. The file type automatically defaults to .dss.
7. Click on Save.
8. Click on OK to close the Data Storage Configuration dialog.

The data storage set file is now created and saved to the PC.

5.4 Data Storage Configuration Dialog

The Data Storage Configuration dialog contains three tabs to access pages for entering data storage settings.

The Trend, Point Log and Alarm Event pages contain dialog boxes for you to select and enter parameters that pertain to data storage of these data information types.

Click on the tabs to edit or create the data storage setting for the available data types:
See: 5.4.1 Trend Storage and Figure 5-3 and Table 5-1
5.4.2 Point Log Storage and Figure 5-4 and Table 5-2
5.4.3 Alarm/Event Storage and Figure 5-5 and Table 5-3

5.4.1 Trend Storage

Trend storage will provide the following:

Number of Files:	2 maximum
Points per Trend:	12 maximum, analog or digital
Storage Modes:	Off, Batch, Continuous
Storage Interval:	2, 5, 10, 20, 50 seconds
	1, 2, 5, 10, 20, 30 minutes
External Control:	Digital tagged signal – Start/Stop of both trends

Trend Page Configuration Procedure

Make sure the Trend tab has been selected. See Figure 5-3.

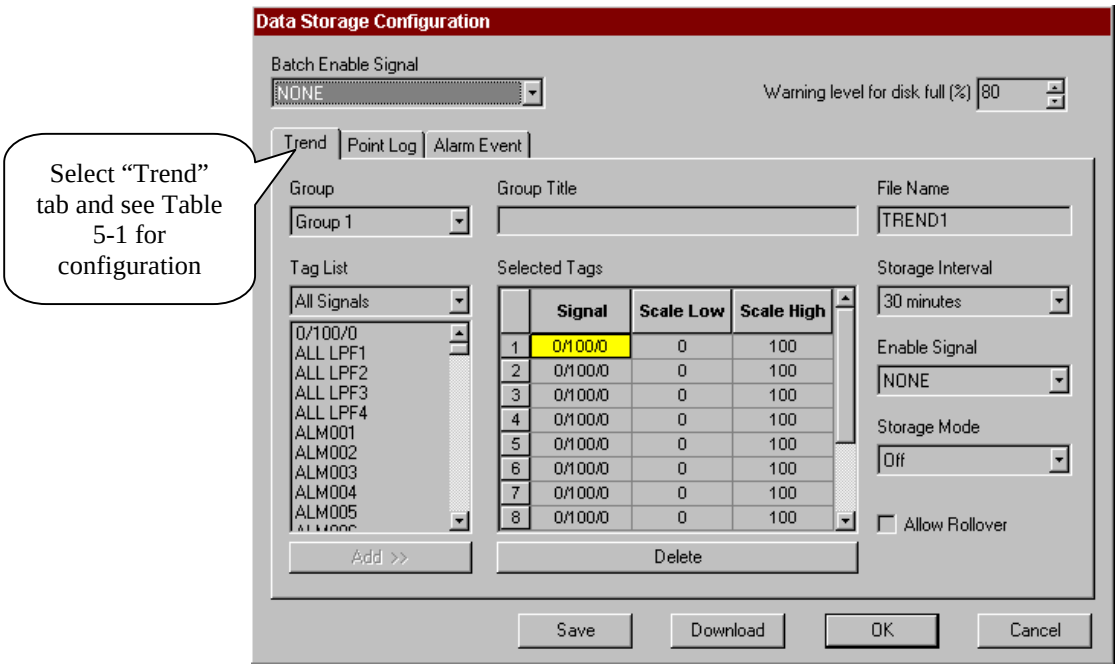
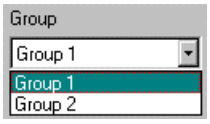
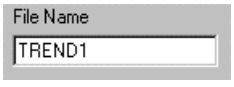
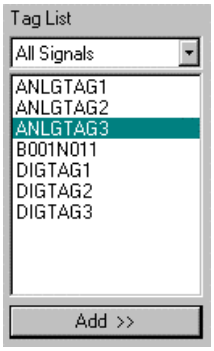
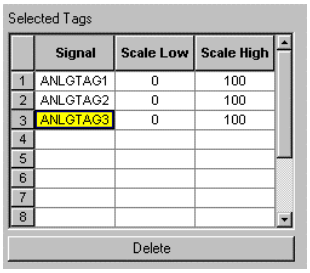
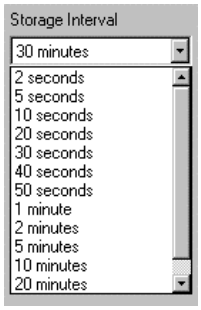
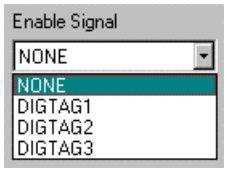
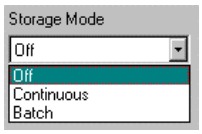
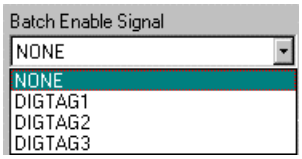


Figure 5-3 Trend Page of the Data Storage Configuration Dialog

Table 5-1 lists all the entry fields that appear on the "Trend" configuration tab with a description of the feature when the field is selected.

Table 5-1 Trend Configuration Details

Feature	Description
	**Group Selection** Use the pull-down menu and select a Trend Group for configuration.
	Group Title Enter a Group Title. There is a maximum of 24 characters.
	**File Name** Enter a File Name. There is a maximum of 8 characters.
	**Tag List** • From the Tag List pull-down menu, select the type of signals you want the tag list to display. • Click on a Tag Name and click **Add >>**. The tag name will be added to the Selected Tags list.

Feature	Description
	**Scaling Signals** Scale each tag selected for High and Low values for the Trend Display. Click on the Scale High and Scale Low fields and enter the value. To delete a signal tag, click on a tag and click **Delete**.
	**Storage Interval** From the Storage Interval pull-down menu, select a storage interval of from 2 seconds to 30 minutes. When Data Storage is enabled, samples will be taken at the interval selected here.
	**Data Type Enable Signal** This enable signal turns storage on and off for trends. From the pull-down menu, select: *NONE* – Trend Storage Enable is started/stopped only through the operator interface's Data Storage Control Menu (defaults to Enable on configuration download). *ANY DIGITAL TAG* – Trend Storage is started/stopped only through the on/off state of the selected Digital Signal. It **will not** appear on the operator interface's Data Storage Control Menu.
	**Storage Mode** From the pull-down menu, select a storage mode.
	**Batch Enable Signal** This signal starts and stops storage for Trends configured for "Batch" storage. It does not affect "Continuous" or "On Command" storage selections. From the pull-down menu, select: *NONE* – Batch is started/stopped only through the operator interface's Data Storage Control Menu (defaults to Stop on configuration download). *ANY DIGITAL TAG* – Batch is started/stopped only through the on/off state of the selected Digital Signal. It **will not** appear on the operator interface's Data Storage Control Menu.
	Rollover **Click** this box to allow data storage to continue collecting data in a circular storage mode where the oldest data is discarded as new data is collected. **Clear** this box to allow data storage to stop collecting data when the file is full. You can configure a Warning Level for Disk Full %.
	Warning Level If you do not select rollover, enter a percent in the appropriate box.

5.4.2 Point Log Storage

Point Log storage will provide the following:

Number of Files:	One
Points per File:	12 maximum, analog or digital
Storage Modes:	Off, Batch, Continuous, On Command
Storage Interval:	1 to 60 minutes, one minute increments 1 to 24 hours, one hour increments One month, same day of each month
External Control:	Digital tagged signal - Start/stop storage to file - On demand sampling

Point Log Page Configuration Procedure

Make sure the Point Log tab has been selected. See Figure 5-4.

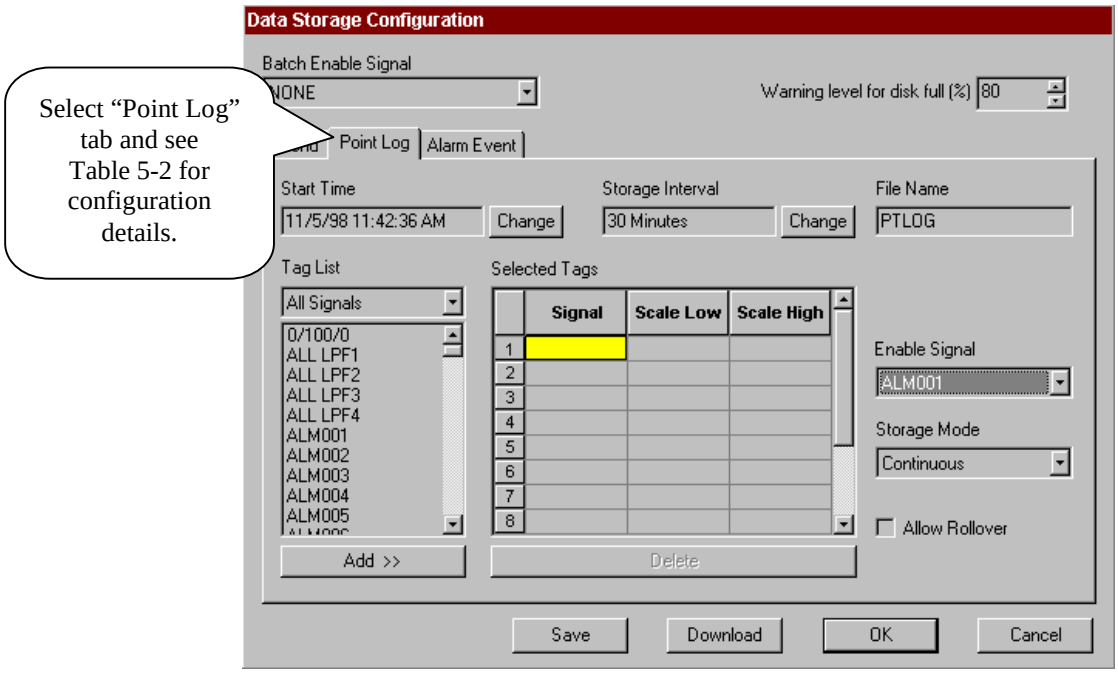
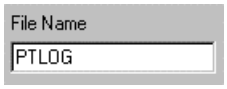
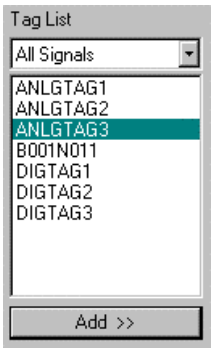
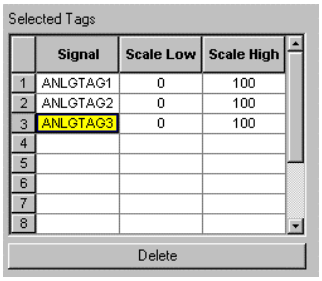
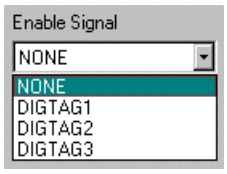
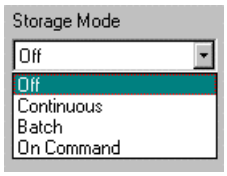
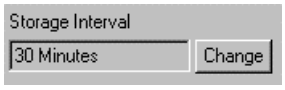
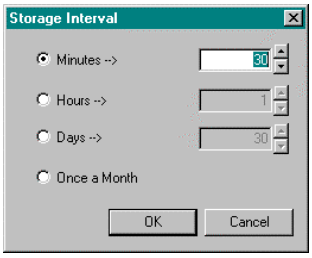
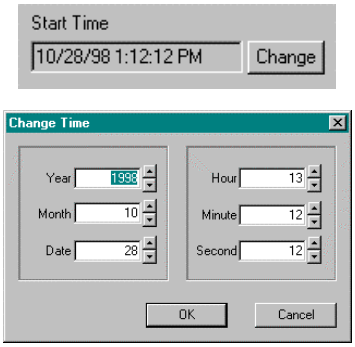
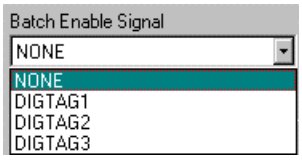


Figure 5-4 Point Log Page of the Data Storage Configuration Dialog

Table 5-2 lists all the entry fields that appear on the "Point Log' configuration tab with a description of the feature when the field is selected.

Table 5-2 Point Log Configuration Details

Feature	Description
	**File Name** Enter a File Name. There is a maximum of 8 characters.
	**Tag List** • From the Tag List pull-down menu, select the type of signals you want the tag list to display. • Click on a Tag Name and click **Add >>**. The tag name will be added to the Selected Tags list.
	**Scaling Signals** Scale each tag selected for High and Low. Click on the Scale High and Scale Low fields and enter the value. To delete a signal tag, click on a tag and click **Delete**.
	**Data Type Enable Signal** This enable signal turns storage on and off for Point Logs. From the pull-down menu, select: NONE – Point Log Storage Enable is started/stopped only through the operator interface's Data Storage Control Menu (defaults to Enable on configuration download). ANY DIGITAL TAG – Enable is started/stopped only through the on/off state of the selected Digital Signal. It **will not** appear on the operator interface's data Storage Control Menu.
	**Storage Mode** From the pull-down menu, select a storage mode.
 	**Storage Interval** NOTE: *For On Command storage mode, there is no storage interval or start time*. • Click on **Change**. The Storage Interval dialog box will appear. • Click on the radio button for Minutes, Hours, or Days • From the pull-down menus, select a storage interval. • Click on the radio button for "Once a Month". • Click OK.

Feature	Description
	**Start Time** NOTE: *For On Command storage mode, there is no storage interval or start time*. • Click on **Change**. The Change Time dialog box will appear. • From the pull-down menu in each field, select a start time. • Click **OK**.
	**Batch Enable Signal** This signal starts and stops storage for Point logs configured for "Batch" storage. It does not affect "Continuous" or "On Command" storage selections. From the pull-down menu, select: *NONE* – Batch is started/stopped only through the operator interface's Data Storage Control Menu (defaults to Stop on configuration download). *ANY DIGITAL TAG* – Batch is started/stopped only through the on/off state of the selected Digital Signal. It **will not** appear on the operator interface's data Storage Control Menu.
	Rollover **Click** this box to allow data storage to continue collecting data in a circular storage mode where the oldest data is discarded as new data is collected. **Clear** this box to allow data storage to stop collecting data when the file is full. You can configure a Warning Level for Disk Full %.
	Warning Level If you do not select rollover, enter a percent in the appropriate box.

5.4.3 Alarm/Event Storage

Alarm/Event storage will provide the following:

Number of Files:	One
Records per File:	150 maximum
Data Types:	All Alarms – 120 maximum, Time/Date, On/Off
	All Events – 32 maximum, Time/Date, On/Off
Storage Modes:	Off, Batch, Continuous
External Control:	Digital Tagged Signal – Start/Stop storage to file

Alarm/Event Page Configuration Procedure

Make sure the Alarm/Event tab has been selected. See Figure 5-5.

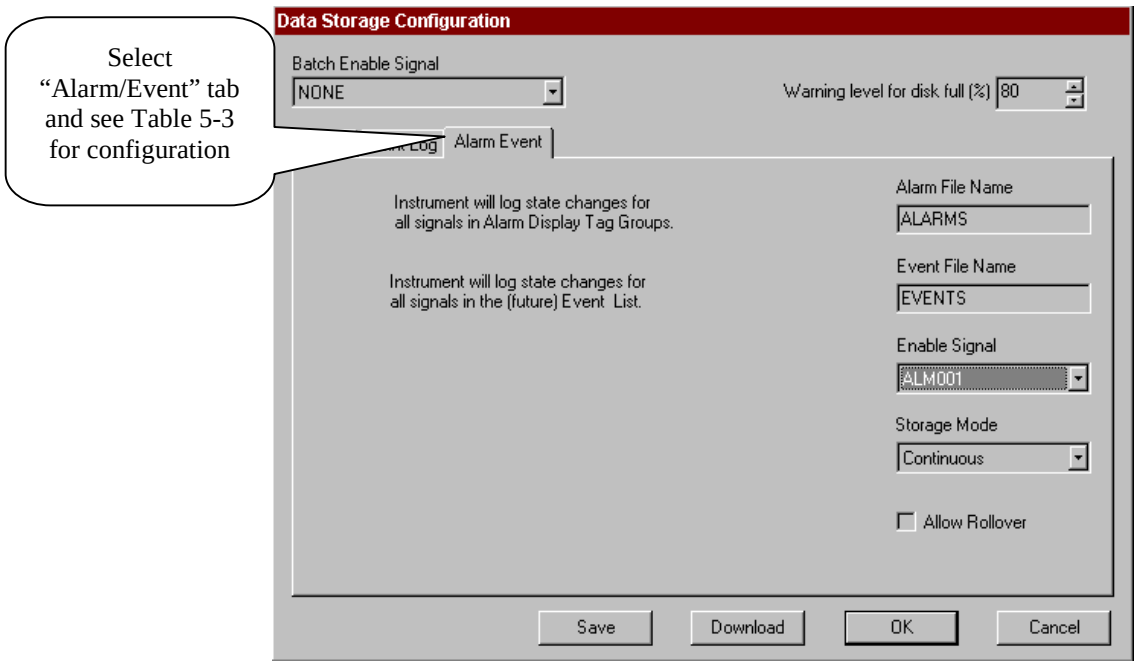
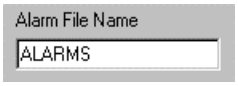
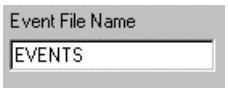
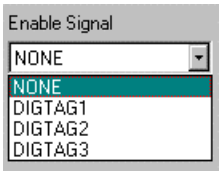
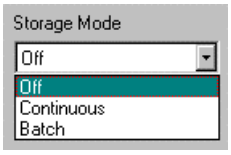
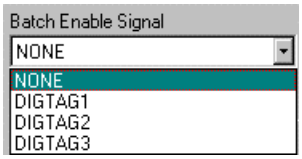


Figure 5-5 Alarm/Event Page of the Data Storage Configuration Dialog

Table 5-3 lists all the entry fields that appear on the Alarm/Event configuration tab with a description of the feature when the field is selected.

Table 5-3 Alarm/Event Configuration Details

Feature	Description
	**Alarm File Name** Enter a File Name. There is a maximum of 8 characters.
	**Event File Name** Enter a File Name. There is a maximum of 8 characters.
	**Data Type Enable Signal** This enable signal turns storage on and off for Alarm/Events. From the pull-down menu, select: NONE – Alarm/Event Storage Enable is started/stopped only through the operator interface's Data Storage Control Menu (defaults to Enable on configuration download). ANY DIGITAL TAG – Enable is started/stopped only through the on/off state of the selected Digital Signal. It **will not** appear on the operator interface's data Storage Control Menu.
	**Storage Mode** From the pull-down menu, select a storage mode.
	**Batch Enable Signal** This signal starts and stops storage for Alarm/Events configured for "Batch" storage. It does not affect the "Continuous" storage selection. From the pull-down menu, select: *NONE* – Batch is started/stopped only through the operator interface's Data Storage Control Menu (defaults to Enable on configuration download). *ANY DIGITAL TAG* – Batch is started/stopped only through the on/off state of the selected Digital Signal. It **will not** appear on the operator interface's data Storage Control Menu.
	Rollover **Click** this box to allow data storage to continue collecting data in a circular storage mode where the oldest data is discarded as new data is collected. **Clear** this box to allow data storage to stop collecting data when the file is full. You can configure a Warning Level for Disk Full %.
	Warning Level If you do not select rollover, enter a percent in the appropriate box.

5.5 Download Data Storage Settings

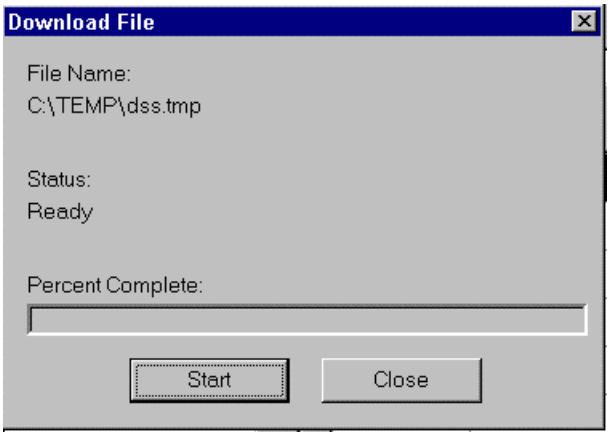
ATTENTION

If you are working off-line, you can save the data storage set files to a floppy disk. The disk then can be loaded into the operator interface disk drive and downloaded into the controller for its use. See “Data Storage” in the *UMC800 Operator Interface User Guide* for instructions on downloading files to the controller.

If you are working on-line, you can download data storage set files directly to the controller.

To download the current setting:

1. Click on the Download button on the Data Storage Configuration dialog. The Download File dialog is displayed. The current file name is displayed.



2. Click on the Start button to initiate the download. The status and percent complete will be displayed. A Download Complete message will be displayed if the download was successful.
3. Click on Close when the download is completed.

The data storage set file is now in the controller.

ATTENTION

Once the .dss file containing the data storage settings is loaded into the controller’s memory, it must be started for the new settings to take effect. See “Start New Storage Settings” in the *UMC800 Operator Interface User Guide* for instructions on loading recipes into the controller configuration.

6. Edit or Download Setpoint Profiles

6.1 Overview

Setpoint Programs (Profiles) files can be edited or new profiles can be created and then saved to disk with the user utility. If you are working off-line, the recipes can be saved to a floppy disk for later downloading to the controller through the operator interface. If working on-line, you can save the setpoint profiles to disk and then download the files directly to the controller.

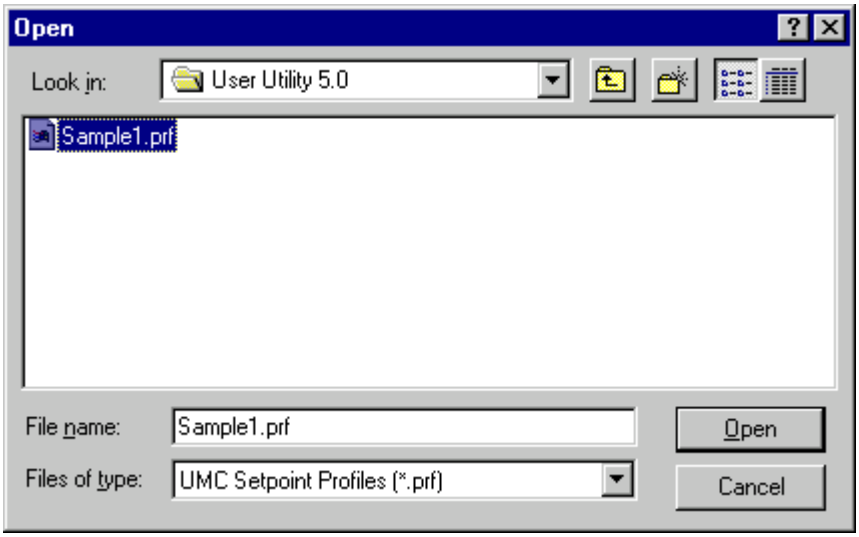
You can create up to 70 different ramp/soak setpoint profiles for the Setpoint Programmer (SPP) control blocks in the controller configuration.

An operator can interact with the configured profiles through the Setpoint Program Operate display at the operator interface.

6.2 Editing a Setpoint Profile

To edit an existing Setpoint Profile:

1. Click on the Setpoint Profile radio button in the Edit or Download section of the main window.
2. Click on the Existing button. The Open dialog is displayed.



3. Point the dialog to the directory where the setpoint profiles are stored.
4. Highlight the desired file.

   NOTE: Setpoint Profiles files are identified by the file extension .prf in the file name.

5. Select the desired profile and click on Open. The Edit Setpoint Profile dialog is displayed. See Figure 6-1.

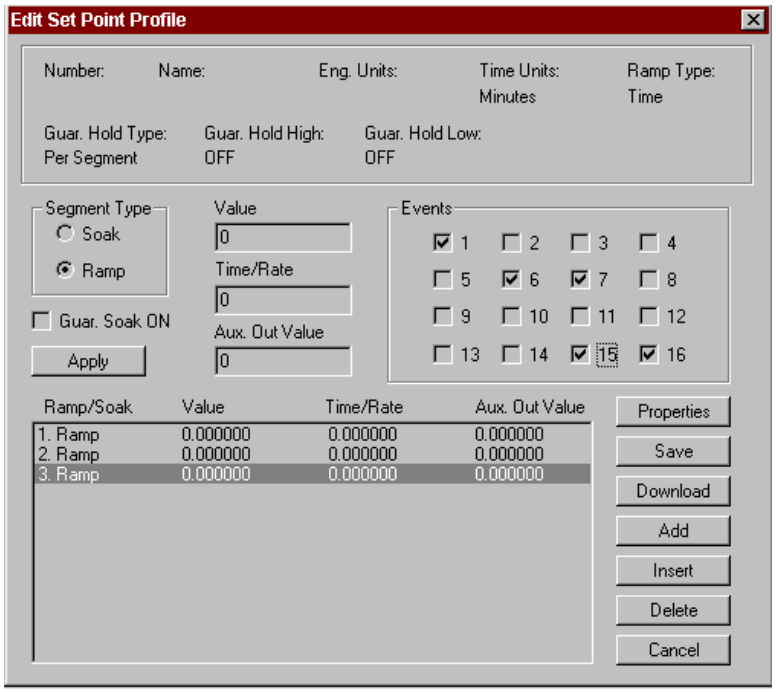


Figure 6-1 Edit Setpoint Profile Dialog

6.2.1 Edit Properties

1. Click on the Properties button to access the Setpoint Profile Properties dialog tabs. See:

   Figure 6-2 and Table 6-1 —Text properties
   Figure 6-3 and Table 6-2 —General properties
   Figure 6-4 and Table 6-3 —Loop/Jog properties
   Figure 6-5 and Table 6-4 —Start/Restart properties
   Figure 6-6 and Table 6-5 —Display properties

   The information entered in the following Setpoint Profile Properties dialog tabs will appear in the Edit Setpoint Profile dialog box.

2. The Setpoint Profile Properties dialog box is divided into five tab cards, each containing specific properties information.

Tab Card	Properties Information
Text	Label, Engineering Units, Aux. Out Description, Aux Out EU Label
General	Ramp Type (time or rate). Guaranteed Hold Type, Time units, Guaranteed Hold Hi/Lo.
Loop/Jog	Jog segment, Loop start segment, Loop end segment, Repeats
Start/Restart	Restart Rate
Display	Display High Limit, Display Low Limit

3. Click on the tab to access the properties for that tab.
4. Enter the information required for each tab then click “OK”.

Text Tab

On this tab, the information that you enter relates to:

- Giving the SP program a name,
- Selecting an Engineering Units Descriptor for the program,
- Describing the Aux. Out (name),
- Selecting an Engineering Units Descriptor for the auxiliary output.

Table 6-1 describes the parameters and the entry information for each parameter. Enter the information in the appropriate fields.

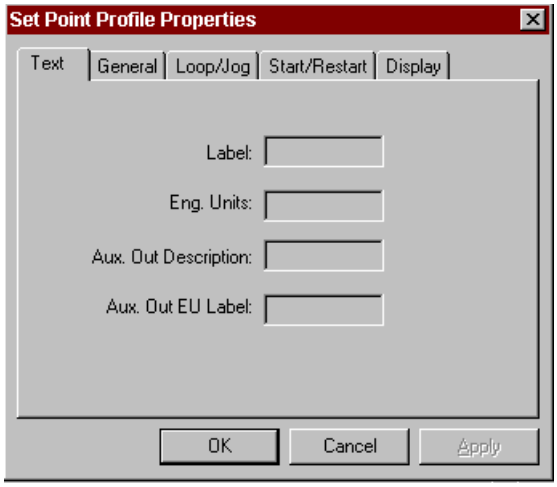


Figure 6-2 SPP Properties—Text

Table 6-1 Text Properties

Parameter	Parameter Description	Entry Information
Label	Program Name	Up to 8 characters
Engineering Units	Engineering Units Descriptor	Up to 4 characters
Aux. Out Description	Auxiliary Output Descriptor	Up to 8 characters
Aux. Out EU Label	Auxiliary Output Engineering Units Descriptor	Up to 4 characters

General Tab

On this tab, the information that you enter relates to:

- Selecting a Ramp type and the assignment of time units to the ramp,
- Selecting a Guaranteed Hold type and the entry of the high and low guaranteed hold values.

Table 6-2 describes the parameters and the entry information for each parameter.

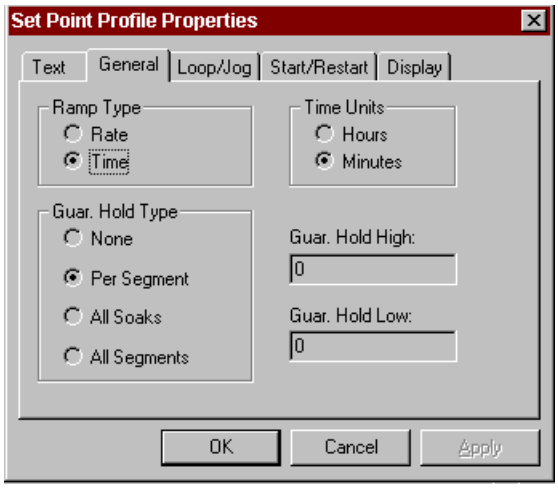


Figure 6-3 SPP Properties—General

Table 6-2 General Properties

Parameter	Parameter Description	Entry Information
Ramp Type	There are two types of Ramps from which to choose:	
Rate	Each ramp segment's time specifies the RATE at which that profile's output will reach the next segment, where the rate is specified in EU/hour or EU/minute.	Click on Radio Button
Time	Each ramp segment's time is the TIME allotted to the profile's output to reach the next segment's value in hours or minutes.	Click on Radio Button
Time Units	This selection assigns the time units (hours *or* minutes) for all segments.	
Hours	For Time ramp type: Time = Hours For Rate ramp type: Rate = EU/Hour For Soaks: Time = Hours	0.00 to 999.99
Minutes	For Time ramp type: Time = Minutes For Rate ramp type: Rate = EU/Minutes For Soaks: Time = Minutes	0.00 to 999.99

Parameter	Parameter Description	Entry Information
Guar. Hold Type	Guaranteed Hold will hold the profile value if a PV to the profile (typically a control loop's PV) deviates specified amounts above or below the profile output.	
None	No Guaranteed Hold	Click on Radio Button
Per Segment	Lets you select specific segments for guaranteed soak where you set up the profile ramps and soaks.	Click on Radio Button
All Soaks	All soaks will have guaranteed soak. No selection during program editing.	Click on Radio Button
All Segments	All segments will have guaranteed soak. No selection during program editing.	Click on Radio Button
Guar. Hold High	The profile will hold if a PV deviates more than the value set here above the profile output. During ramps, the SPP output is also held.	Number in Engineering Units above the setpoint outside of which the timer halts
Guar. Hold Low	The profile will hold if a PV deviates more than the value set here below the profile output. During ramps, the SPP output is also held.	Number in Engineering Units below the setpoint outside of which the timer halts

Loop/Jog Tab

On this tab, the information that you enter relates to:

- Setting a program or loop with start and end segments,
- How many times the Program/loop will be recycled, and
- If you require a Jog segment, the segment number to which the program will jump when activated.

Table 6-3 describes the parameters and the entry information for each parameter.

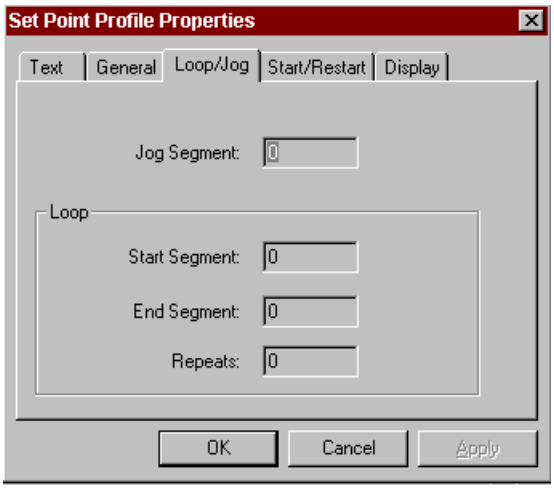


Figure 6-4 SPP Properties—Loop/Jog

Table 6-3 Loop/Jog Properties

Parameter	Parameter Description	Entry Information
Jog Segment	Logic input (JOG) will cause the profile to jump to the start of the step designated then continue.	Segment number jog will go to
Loop	A loop causes a specific set of segments with a start number and an end number to repeat a specific number of times.	
Start Segment	This designates the number of the first segment of the loop.	1–49
End Segment	This designates the number of the last segment of the loop. The last segment of a program must be a soak segment. Last segment of a loop can be ramp or soak.	2–50
Repeats	This number lets the program repeat (loop) a specified number of times from beginning to end.	1–10 0 = Loop indefinitely Maximum 100

Start/Restart Tab

On this tab, the information that you enter relates to:

- Entering a restart rate value that will be used in the event of a power loss while a program is running.

Table 6-4 describes the parameters and the entry information for each parameter.

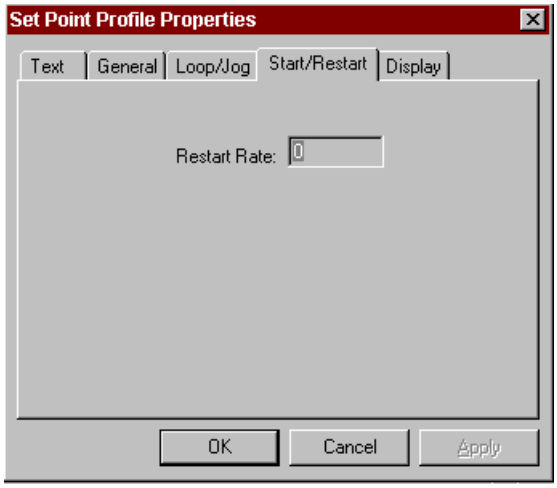


Figure 6-5 SPP Properties—Start/Restart

Table 6-4 Start/Restart Properties

Parameter	Parameter Description	Entry Information
Restart Rate	This recovery ramp rate is provided in the event of a power loss while a program is running. The Restart Rate value is used to return the process to the last operating setpoint prior to power loss when restart input is connected to power off timing block.	Value in Engineering Units

Display Tab

On this tab, the information that you enter relates to:

- Setting upper and lower limits for the SP Trend display.

Table 6-5 describes the parameters and the entry information for each parameter.

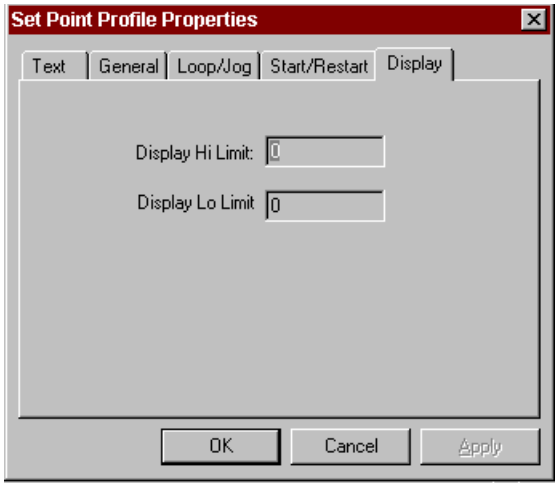


Figure 6-6 SPP Properties—Display

Table 6-5 Display Properties

Parameter	Parameter Description	Entry Information
Display Hi Limit	This is the upper limit for the SP Trend display.	Allow for the maximum and minimum profile and PV values.
Display Lo Limit	This is the lower limit for the SP Trend display.	Allow for the maximum and minimum profile and PV values.

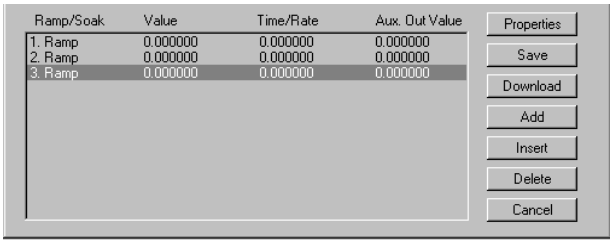
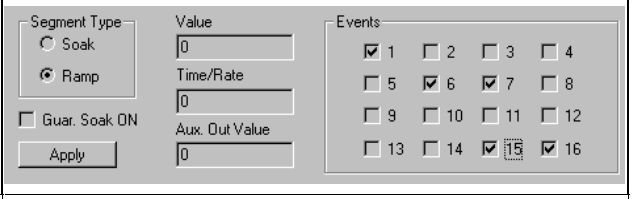
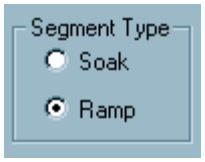
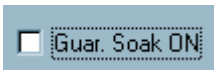
6.2.2 Setpoint Profile Edit Dialog

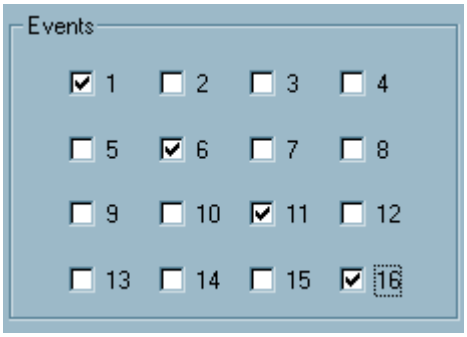
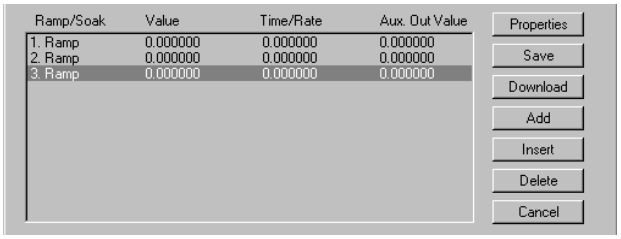
The Profile Edit dialog allows you to build a ramp/soak profile by:

- Adding or inserting segments to a list of segment
- Selecting the type of segment—Ramp or Soak
- Selecting guaranteed soak for soak segments, if desired
- Entering the value for the ramp or soak
- Entering the value of the time or ratio for the segment
- Selecting an aux. out value (if required) for the segment
- Selecting the events you want turned on or off at the beginning of the segment
- Applying these selections to the segment
- Repeating the procedure for all the segments in the program

Table 6-6 shows the areas of the Setpoint Profile Edit dialog and the steps to follow to edit the profile.

Table 6-6 Profile Setup/Edit Configuration

Action	Dialog Box/Window
*To **Add** a Segment* • Click on ADD. If it is the first segment, all the fields in the Profile Data Entry Area will become active. The default is a ramp. *To **Insert** a Segment* • Click on the Ramp/Soak number in the field and click Insert. A segment will be inserted *after* the segment selected. This will change all the segment numbers following the insertion. *To **Delete** a Segment* • Click on the Ramp/Soak number in the field and click Delete. The segment will be deleted and all the segment numbers following the deletion will be changed.	
• Select (click on) a segment number and configure the segment information in data entry area.	
• Click on radio button to choose the segment type for the selected segment: Soak or Ramp. The default when you select a segment number is Ramp. NOTE: You can configure consecutive ramps or soaks.	
If Guar. Soak Type, listed in the properties information block at the top of the dialog box, is Per Segment, you can select Guaranteed Soak ON for the segment. • Click on the box to turn Guaranteed Soak ON. NOTE: If Guar. Soak Type listed is • None • All Soak • All Segments No selection is necessary.	
• Enter the value for the ramp or soak selected. NOTE: The first ramp will always default to the PV value. **Ramp**—The value from which the ramp will start. **Soak**—The Soak Segment Setpoint value is the desired value of the PV during soak segments. NOTE: The Ramp type and Time units are shown in the properties information area at the top of the dialog box.	

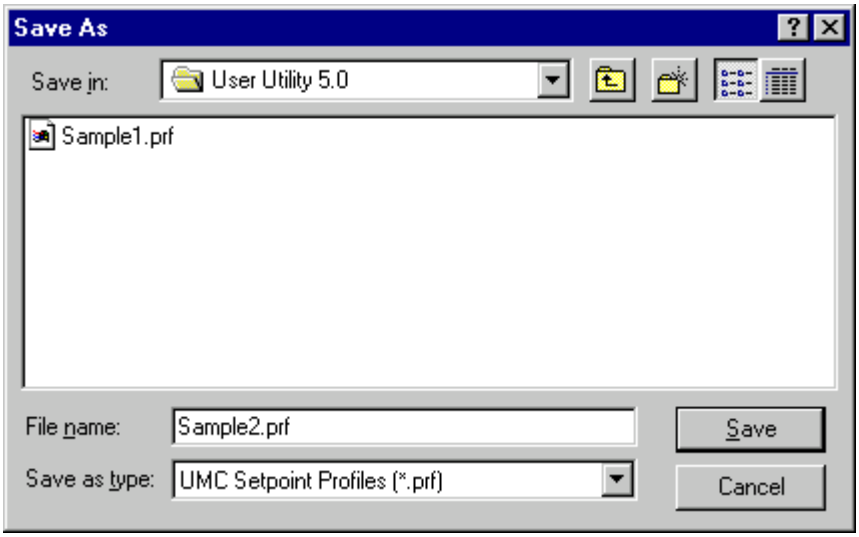
Action	Dialog Box/Window
• Enter the value of the Time or Rate for the segment. **Ramp**—Time: 0.01 to 999.99 hours or minutes Rate: 0.01 to 999.99 EU/hour or EU/minute **Soak**—Segment soak duration NOTE: A Time/Rate value of 0.00 is invalid and is not allowed.	
• Enter the Aux. Out value (if required) for the segment selected. Aux. Out is a fixed soak value that is available for each step of the program.	
• Select which events you want to turn ON or OFF at the beginning of each segment. Segment events are digital switches that provide ON/OFF output through an SPEV function block in the Control Builder. When a segment event is turned ON, it remains on until the end of the segment at which time it is turned OFF unless it is configured to turn ON in the next segment. Note that segment events are not interrupted by soak time delays when the PV is outside the guaranteed soak band. Events turn on as soon as previous segment is completed even if the PV has not reached the soak setpoint.	
After all the selections and entries are made for the segment: Click on Apply. The information configured for the segment will be reflected in the “Profile Segment Setup” field.	

ATTENTION

- If you are *setting up* the profile for the first time, repeat the procedure for all segments in the program.
- If you want to *edit* a particular segment, click on the segment number and edit the segment information in the Data Entry Area.

6.3 Save Setpoint Profile

1. Click on Save. The Save As dialog is displayed. The file type automatically defaults to .prf.



2. If the current name and directory are satisfactory, click on Save, otherwise change the directory and/or the file name if desired.
3. Click on Save.
4. Click on Cancel to close the Edit Setpoint Profile dialog.

The setpoint program file is now saved to the PC.

6.4 Creating a New Setpoint Profile

To create a new Setpoint Profile

1. Click on the radio button for the Setpoint Profile.
2. Click on New. The Edit Setpoint Profile dialog will be displayed.
3. Create the profile as desired. (Same as subsection 6.2 Editing a Setpoint Profile.)
4. Click on Save. The Save As dialog is displayed.
5. Point the dialog to the correct directory and enter a filename. The file type automatically defaults to .prf.
6. Click on Save.
7. Click on OK to close the Edit Setpoint Profile dialog.

The setpoint profile is now created and saved out to the disk drive.

6.5 Downloading a Setpoint Profile

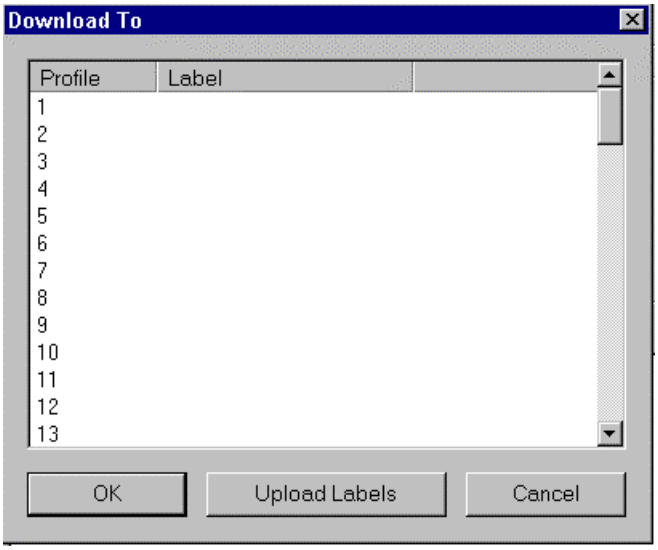
ATTENTION

If you are working off-line, you can save the setpoint profiles to a floppy disk. The disk then can be loaded into the operator interface disk drive and downloaded into the controller for its use. See “Disk Utilities” in the *UMC800 Operator Interface User Guide* for instructions on downloading files to the controller.

If you are working on-line, you can download setpoint profiles directly to the controller.

To download the current profile:

1. Make sure the PC is connected to the controller.
2. Click on the Download button on the Edit Setpoint Profile dialog. The Download To dialog is displayed.



3. Optionally, click on the Upload Labels button. All current SPPs labels will be uploaded from the controller.
4. Select either an empty profile or a profile to overwrite and click on OK. The Download File dialog is displayed.
5. Click on Start and the profile will be downloaded. The dialog shows the download status and percent complete as the download progresses.
6. When the Download Complete message is displayed (if download was successful), click on Close.

The setpoint profile is now in the controller.

ATTENTION

Once a setpoint profile is loaded into the controller’s memory, it must be loaded from memory into the controller configuration where the program can be run. See “Load Program” in the *UMC800 Operator Interface User Guide* for instructions on loading profiles into the controller configuration.

7. Edit or Download Setpoint Schedules

7.1 Overview

Setpoint Schedule files can be edited or new schedules can be created and then saved to disk with the user utility. If you are working off-line, the schedules can be saved to a floppy disk for later downloading to the controller through the operator interface. If working on-line, you can save the setpoint schedules to disk and then download the files directly to the controller.

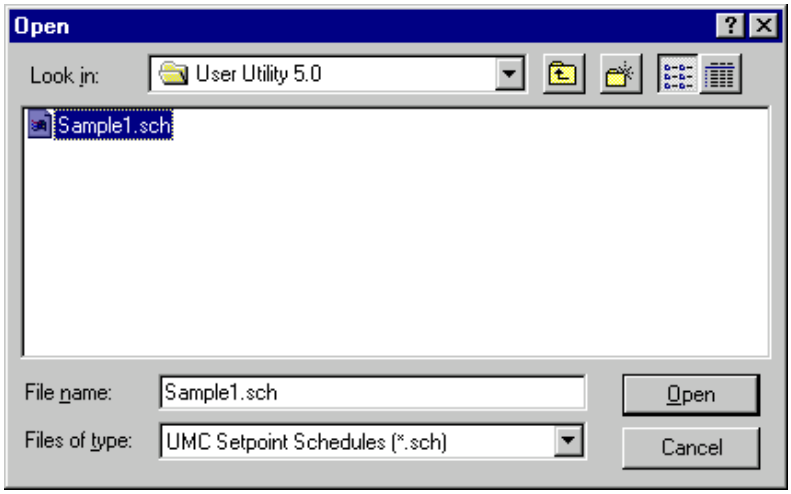
You can create up to 10 different Setpoint Schedules for the Setpoint Scheduler (SPS) control blocks in the configuration.

An operator can interact with the configured schedules through the Setpoint Program Operate display at the operator interface. Descriptive labels and engineering units for each PV of the setpoint block are selected during controller configuration and will appear in the setpoint scheduler displays

7.2 Editing a Setpoint Schedule

To edit an existing Setpoint schedule:

1. Click on the Setpoint Schedule radio button in the Edit or Download section of the main window.
2. Click on the Existing button. The Open dialog is displayed.



3. Point the dialog to the directory where the setpoint schedules are stored.
4. Highlight the desired file.

> **ATTENTION**
>
> Setpoint Schedule files are identified by the file extension .sch in the file name.

5. Select the desired profile and click on Open.Select the desired schedule file (*.sch) and click on Open. The Setpoint Schedule Properties dialog is displayed. See Figure 7-1.

7.2.1 Setpoint Schedule Properties

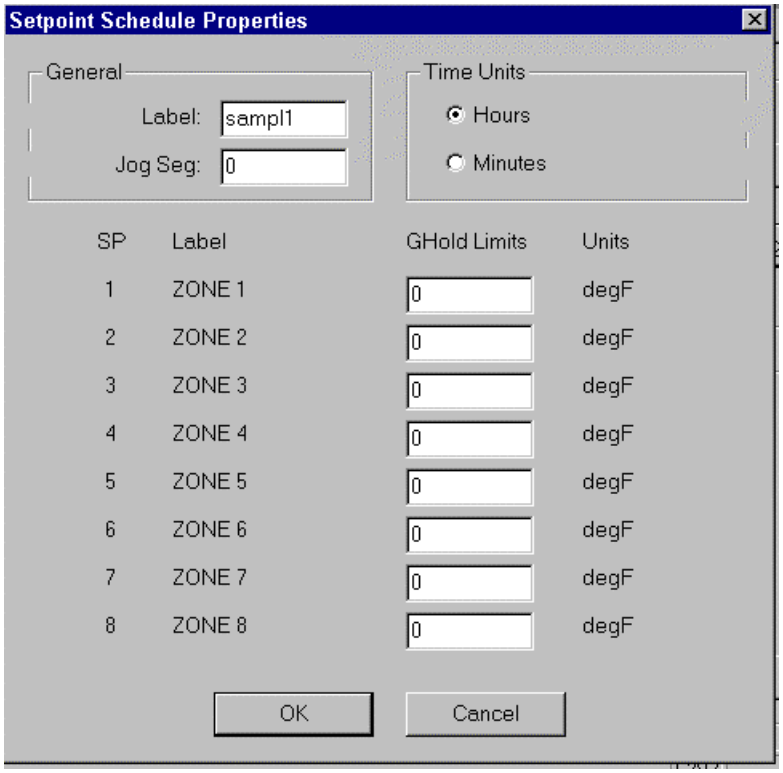


Figure 7-1 Setpoint Schedule Properties Dialog

6. Enter the information in the appropriate fields, Table 7-1 describes the parameters and entry information for each parameter. Click OK.

Table 7-1 Setpoint Schedule Properties

Parameter	Parameter Description	Entry Information
General		
Label	Schedule Name	6 characters
Jog Seg	Logic input (JOG) on state switch block will cause the schedule to jump to the start of the segment designated then continue.	Segment number jog will go to
Time Units	This selection assigns the time units (hours *or* minutes) for all segments.	
Hours	Time unit in Hours	Click on Radio button
Minutes	Time unit in Minutes	Click on Radio button
GHold Limits (Guaranteed Hold Limits)	The schedule will hold if a PV deviates above or below (or both) the Setpoint value set here. Select Guaranteed Hold Type on the “Setpoint Edit Schedule” dialog box.	Enter a setpoint value

NOTE: The Label and Units values shown in the Properties dialog are selected during controller configuration.

7.2.2 Edit Setpoint Schedule

The Schedule Edit dialog will be displayed for the selected schedule file. The active area of the display lists any configured segments for the schedule. Figure 7-2 shows an example of the Edit Schedule dialog.

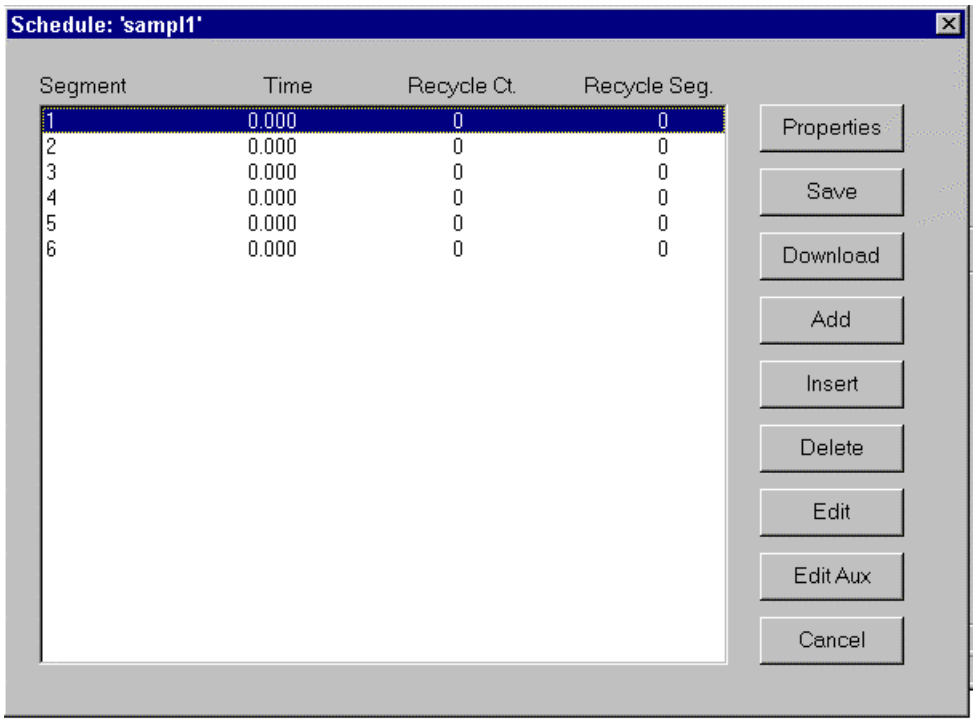


Figure 7-2 Edit Schedule Dialog

To edit the current setpoint schedule:

1. Make the necessary changes to the current schedule.
   - *To **Add** a Segment* -
     - Click on Add. A new segment number will appear at the bottom of the segment list.
   - *To **Insert** a Segment* -
     - Click on a segment number in the field and click "Insert". A segment will be inserted *after* the segment selected. This will change all the segment numbers following the insertion
   - *To **Delete** a Segment* -
     - Click on a segment number in the field and click "Delete". The segment will be deleted and all the segment numbers following the deletion will be changed
   - *To **Edit** a Segment* -
     - Click on a segment number in the field and click "Edit".
       See subsection 7.2.3 for Edit Segment Data Entry information.
   - *To **Edit the Auxiliary Outputs** for the Segment* -
     - Click on a segment number in the field and click on the "Edit Aux" button.
       See subsection 7.2.4 for Edit Auxiliary Output Data Entry information.
2. Once you have made the necessary changes to the schedule and schedule segments, save the file.

7.2.3 Edit Schedule Segments

For each segment selected in the “Setpoint Schedule Edit” dialog box, an “Edit Schedule Segment” dialog box will appear when you click on the “Edit” button. The segment number is shown at the top. Figure 7-3 is an example of a Setpoint Schedule Segment dialog box.

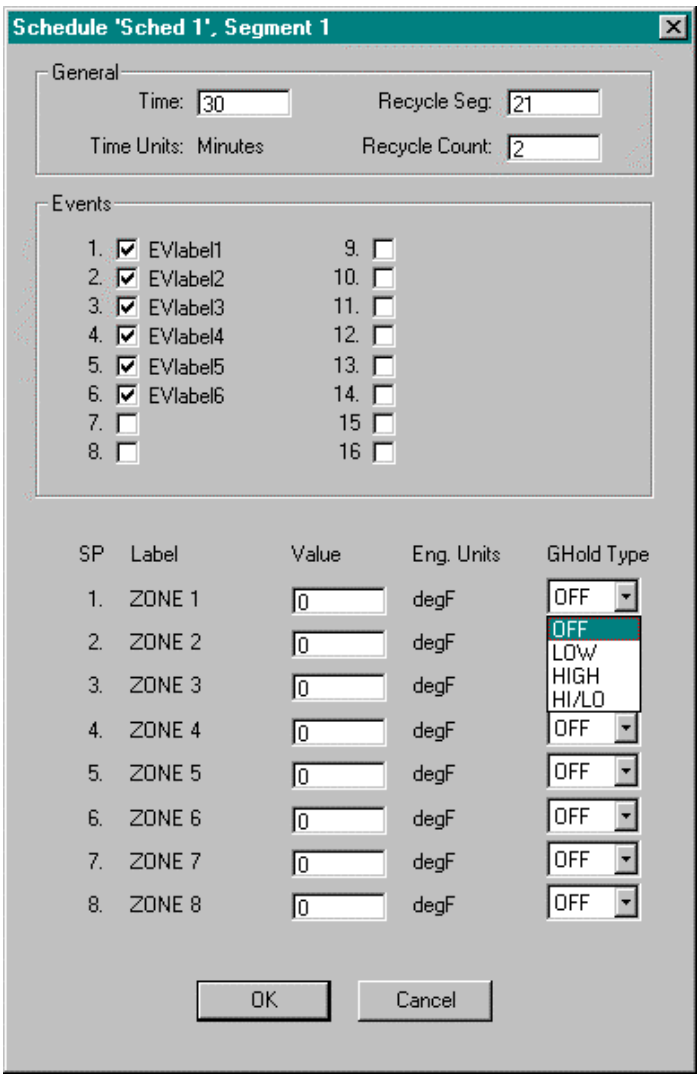


Figure 7-3 Setpoint Schedule Segment Edit Dialog Box

3. Refer to Table 7-2 and enter the segment information in the appropriate fields, then click OK. The user utility will return you to the Setpoint Schedule Edit dialog box.

Table 7-2 Setpoint Schedule Segment Edit Parameters

Parameter	Parameter Description	Entry Information
General		
Time	Length of time for the segment Time Units were selected in the "Setpoint Schedule Properties" Dialog Box	Value in Minutes or Hours, whichever has been selected.
Recycle Seg	Recycle Segment – the segment number at which a recycle will start	Enter a value 0 to 50
Recycle Count	Recycle Count - This number lets the schedule repeat (loop) a specified number of times.	Enter a value 1-999 or 0 for infinite
Events	Segment events are digital switches that provide ON/OFF output through an SPS function block in the Control Builder. When a segment event is turned ON, it remains on until the end of the segment at which time it is turned OFF unless it is configured to turn ON in the next segment.	Select which events you want to turn ON or OFF at the beginning of each segment.
Setpoints		
Values	Setpoint Values for SP1 through SP8	Enter Setpoint Value
GHold Type	Setpoint guarantee is provided for the master block setpoints with a single symmetrical value for each setpoint output. Actions for the guarantee soak may be set on a per segment basis for OFF, high setpoint deviation, low setpoint deviation or both high and low setpoint deviations.	
OFF	No Guaranteed Hold	No Entry
HIGH	High setpoint deviation The schedule will hold if a PV deviates above the Setpoint value set.	Select from Drop-down menu
LOW	Low setpoint deviation The schedule will hold if a PV deviates below the Setpoint value set on the "Setpoint Schedule Properties" dialog box.	Select from Drop-down menu
HI/LO	High and low setpoint deviations The schedule will hold if a PV deviates above or below the Setpoint value set on the "Setpoint Schedule Properties" dialog box.	Select from Drop-down menu

7.2.4 Edit Auxiliary Outputs for the Segment

You can assign values to all eight auxiliary outputs for each segment by clicking the “Edit Aux” button on the dialog box. The auxiliary block supports up to 8 soak only outputs. Enter values for all Auxiliary Outputs in the Value fields.

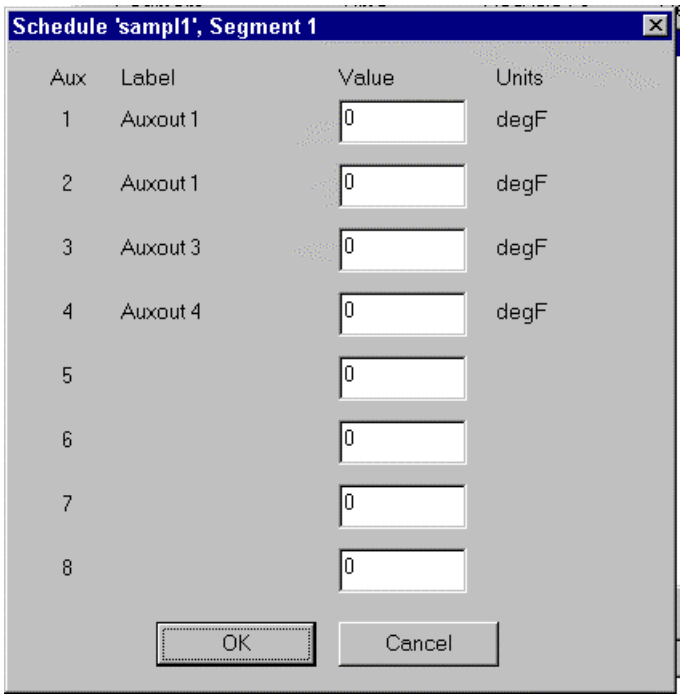
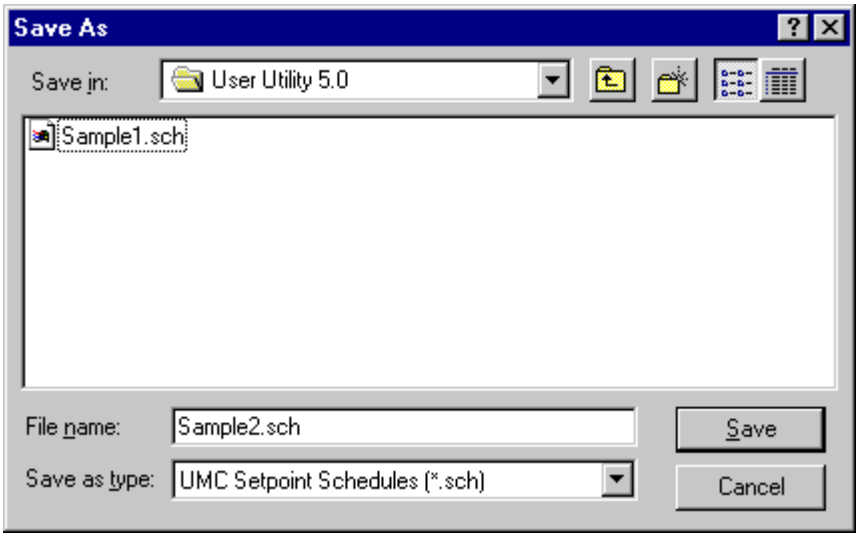


Figure 7-4 Auxiliary Output Edit Dialog

4. Click OK. The user utility will return you to the Setpoint Schedule Edit dialog box.

7.3 Save Setpoint Schedule

1. Click on Save. The Save As dialog is displayed. The file type automatically defaults to .sch.



2. If the current name and directory are satisfactory, click on Save , otherwise change the directory and/or the file name if desired.
3. Change the directory and/or the file name if desired.
4. Click on Save.
5. Click on Cancel to close the Edit Setpoint Schedule dialog.

The setpoint schedule file is now saved to the PC.

7.4 Create a New Setpoint Schedule

To create a new Setpoint Schedule:

1. Click on the radio button for the Setpoint Schedule.
2. Click on New. The Setpoint Schedule Properties dialog will be displayed.
3. Create the schedule as desired by following the same steps for:
   - Setpoint Schedule Properties (subsection 7.2.1)
   - Setpoint Schedule Edit (subsection 7.2.2)
   - Edit Schedule Segments (subsection 7.2.3)
   - Edit Auxiliary Outputs for the Segment (subsection 7.2.4)
4. Click on Save. The Save As dialog is displayed.
5. Point the dialog to the correct directory and enter a filename. The file type automatically defaults to .sch.
6. Click on Save.
7. Click on OK to close the Edit Setpoint Schedule dialog.

The setpoint schedule is now created and saved out to the disk drive.

7.5 Downloading a Setpoint Schedule

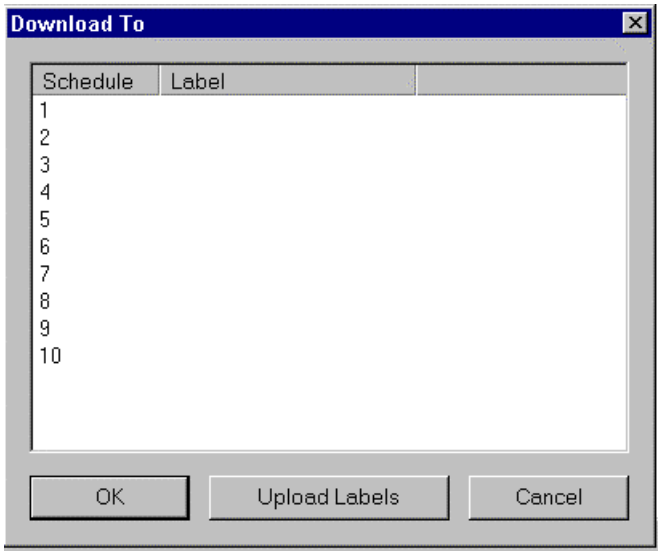
ATTENTION

If you are working off-line, you can save the setpoint schedules to a floppy disk. The disk then can be loaded into the operator interface disk drive and downloaded into the controller for its use. See "Disk Utilities" in the *UMC800 Operator Interface User Guide* for instructions on downloading files to the controller.

If you are working on-line, you can download setpoint schedule files directly to the controller.

To download the current schedule:

1. Make sure the PC is connected to the controller.
2. Click on the Download button on the Edit Setpoint Schedule dialog. The Download To dialog is displayed.



3. Optionally, click on the Upload Labels button. All current Setpoint Schedule labels will be uploaded from the controller.
4. Select either an empty schedule or a schedule to overwrite overwrite and click on OK. The Download File dialog is displayed.
5. Click on Start and the schedule will be downloaded. The dialog shows the download status and percent complete as the download progresses.
6. When the Download Complete message is displayed (if download was successful), click on Close.

The setpoint schedule is now in the controller.

ATTENTION

Once a setpoint schedule is loaded into the controller's memory, it must be loaded from memory into the controller configuration where the schedule can be run. See "Load Schedule" in the *UMC800 Operator Interface User Guide* for instructions on loading setpoint schedules into the controller configuration.

8. Communication Menu

8.1 Overview

The Communication Menu (see Figure 8-1) contains the following items:

- Setup
- Download Controller File
- Upload Controller File
- Remote Loopback
- Error Statistics
- Dial Modem
- Hang Up Modem

Each of these menu items are discussed further in this chapter.

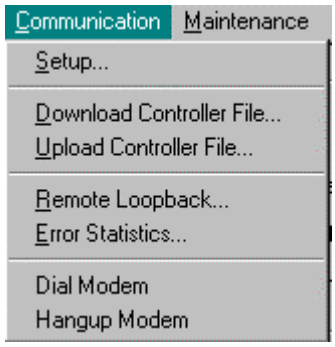


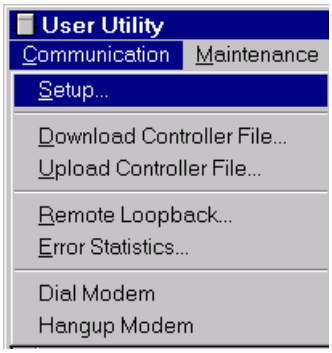
Figure 8-1 Communication Menu

8.2 Setup

You can use the User Utility to choose a computer port and select the communication parameters to match your controller communications settings.

Procedure

From the Main Window Communication menu, select Setup.



The "Communication Setup" dialog box will appear. See Figure 8-2. Table 8-1 describes the parameters and entry information for each parameter

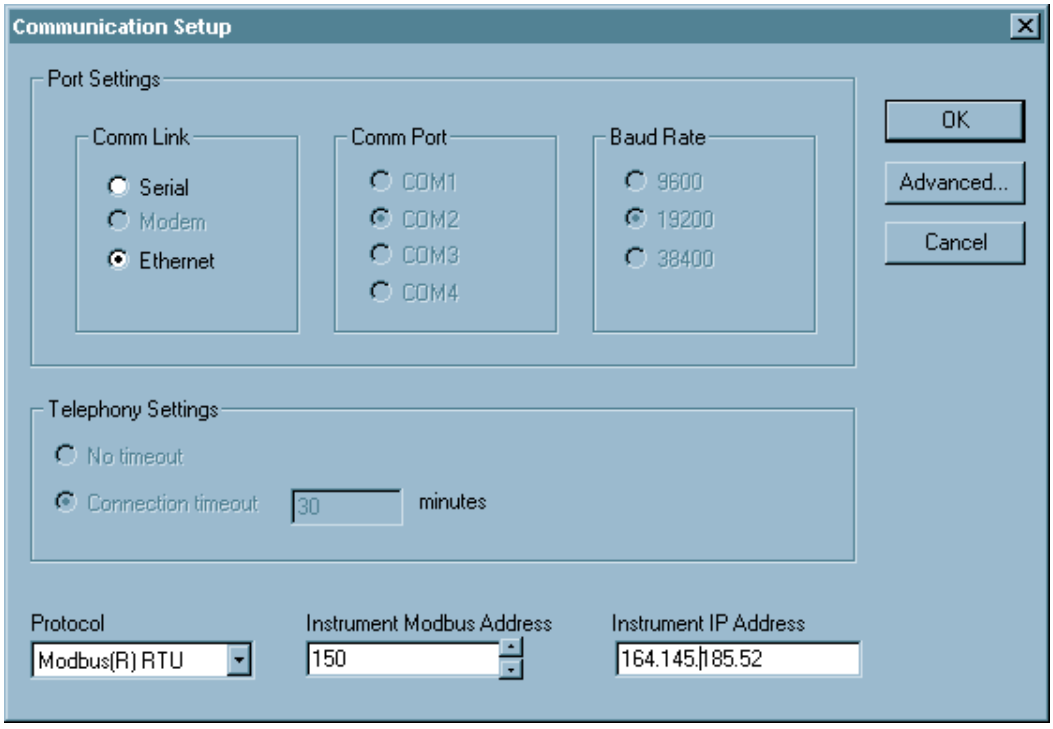
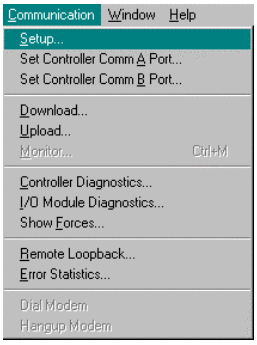
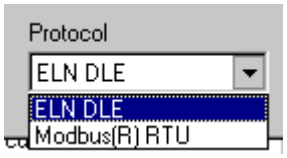
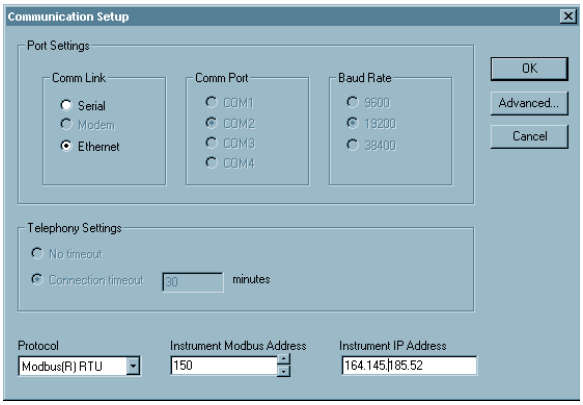


Figure 8-2 Communication Setup Dialog

Step	Action	Graphic/Result
1	From the Main Window Communications menu, select " Setup". The "Communications Setup" dialog box will appear.	
2	Select a Protocol from the "Set Up" Dialog Box If you select "**ELN DLE**", Comm Links allowed are: "**SERIAL**" or "**MODEM**" (Step 3) If you select "**Modbus RTU**", Comm links allowed are: "**SERIAL**" or "**ETHERNET**" (Step 4)	
3	**ELN DLE** *If you select **SERIAL*** • Select the Communications Port.. The Baud Rate of 9600 is automatically selected. *If you select **Modem**, (See Remote Controller Access)* • The Telephony setting become active Select **No Timeout** (no timeout is performed and the application will stay connected until you manually hang up. Select **Connection Timeout** (Enter, in minutes, how long the application will leave the line open before hanging up automatically)	 Attention: If there are no **Modems** installed, Windows 'NT will notify you when you select "Modem". Windows '95 message will read "Unrecognized TAPI error has occurred" Verify that your modem driver is properly installed. NOTE: The modem timeout will not interrupt a communications operation in progress.

Step	Action	Graphic/Result

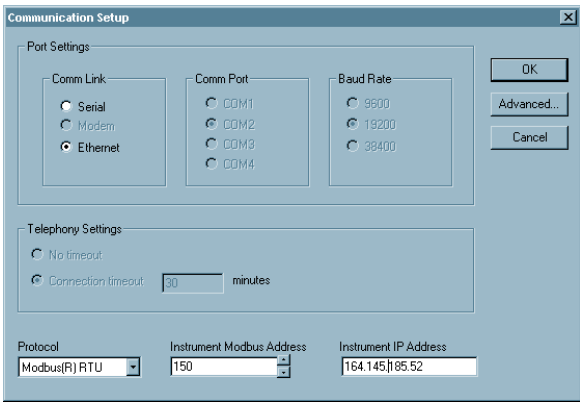
4 **Modbus RTU**

*If you select **SERIAL***

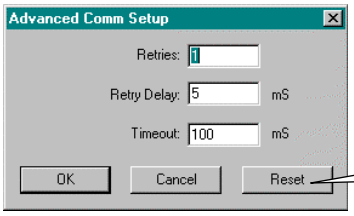
- Select the Communications Port. The Baud Rate of 19200 is automatically selected.
- Enter the Instrument address in the active field.

*If you select **Ethernet***

- Enter the Instrument Modbus address in the active field.
- Enter the IP Address configured for the Ethernet Bridge Module on the instrument in the active field.



5 Then click on “ADVANCED”.



Caution:

It is not recommended that you set the values lower than those shown in the dialog box, since it may cause some communications operations to fail.

Press this button to reset these fields.

6 Refer to Table 8-1 for a list of available Communications parameters and selections, make the entries in the active fields of each dialog box, then press OK.

Table 8-1 Communications Parameters

Properties Group	Parameter	Parameter Description	Value or Selection
Protocol	**ELN DLE** **Modbus®RTU**	Proprietary RS232 Protocol Modbus® RTU Protocol	Select from Drop down menu
Comm Link	**SERIAL** **MODEM** **ETHERNET**	Standard Comm Link Remote Comm Link Ethernet Comm Link	Click on radio button to select
Comm Port	**COM 1** **COM 2** **COM 3** **COM 4**	Serial Communications Port 1 Serial Communications Port 2 Serial Communications Port 3 Serial Communications Port 4	Click on radio button to select
Baud Rate	**9600** **19.2K** **38.4K**	9600 Baud (RS232 Protocol) 19,200 Baud (Modbus Protocol) 38,400 Baud (selectable)	Click on radio button to select Baud. Baud is automatically set for Protocol selection.
Telephony Settings	**No Timeout**	No timeout is performed and the application will stay connected until you manually hang up	Click on radio button to select
	Connection Timeout	Enter in the active field, (in minutes) how long the application will leave the line open before hanging up automatically	Click on radio button to select
Instrument Modbus Address	**1 to 247**	Instrument Address for Modbus Protocol	Enter a decimal value
Instrument IP Address	**0.0.0.0**	Instrument IP Address configured for the Ethernet Bridge Module on the instrument	Enter numbers separated by decimals
Number of Retries	**1***	Number of retries before abort	Enter a decimal value
Delay between Retries (ms)	**50***	Delay in milliseconds between communications retries	Enter a value in milliseconds
Receive time-out (ms)	**1000***	Time value after transmission to wait for a response before retry or abort.	Enter a value in milliseconds

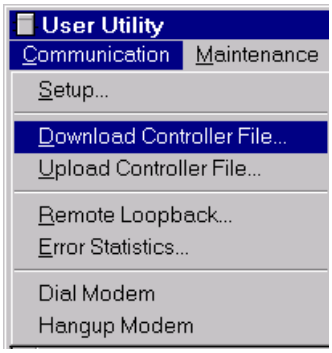
**** Default Setup***

8.3 Download Controller File

The Download Controller File option on the Communication menu allows you to download the current controller configuration file (*.fbd) to the controller.

To download a file

1. Connect PC to the controller.
2. Make sure the communications setup is correct.
3. Select the Download Controller File option from the Communication menu.



The Download File dialog displays the name of the current file, the status of the process and the Percent Complete. See Figure 8-3

4. Click on Start. The process is displayed through the Percent Complete section of the dialog.

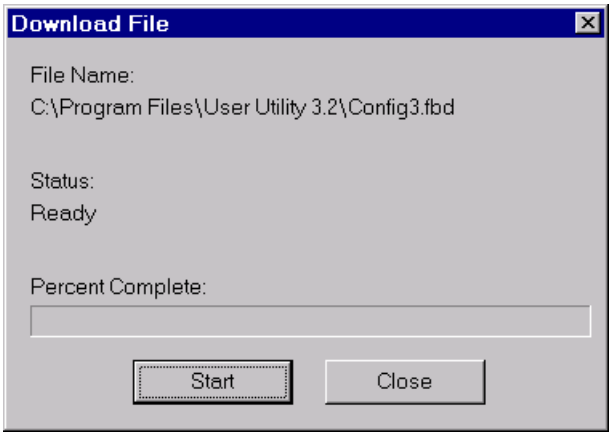


Figure 8-3 Download Controller File Dialog

5. Click on Close when the download is complete.

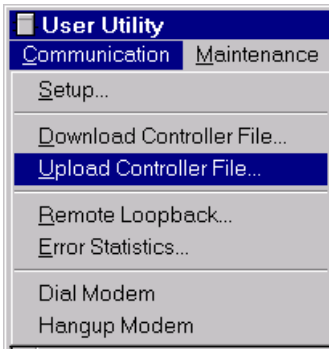
The controller configuration file is now in the controller memory.

8.4 Upload Controller File

The Upload Controller File option on the Communication menu allows you to upload the current controller configuration file (*.fbd) from the controller.

To upload a file:

1. Connect PC to the controller.
2. Make sure the communications setup is correct.
3. Select the Upload Controller File option from the Communication menu.



The Upload File dialog displays the name of the temp file that the controller file is being copied into, the status of the process and the Percent Complete. See Figure 8-4.

4. Click on Start. The User Utility will then upload the current controller file to the upload.tmp file.

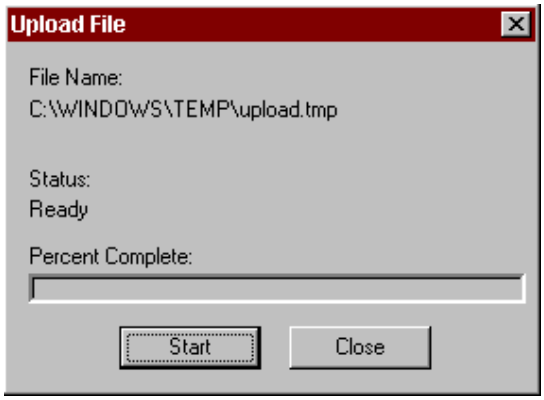


Figure 8-4 Upload Controller File Dialog

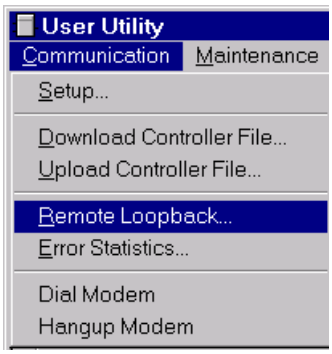
5. Click on close when the Status displays Complete.
6. When the Save As dialog is displayed enter the controller file name. The directory can also be changed at this time.
7. Click on Save when the information displayed is correct.
8. Click on Close when the file has been saved.

The controller configuration file is now saved to disk on the PC.

8.5 Remote Loopback

Remote Loopback tests the connection between the PC and Controller file. Follow the procedure below to run the Remote Loopback test.

1. Select the Remote Loopback option from the Communication menu. The Remote Loopback Test dialog will be displayed.



2. Click on Send to start the test.

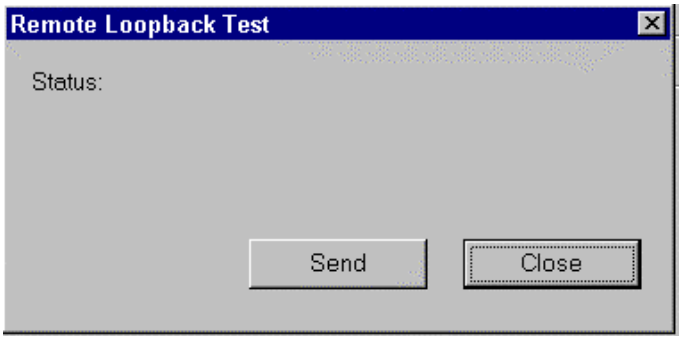
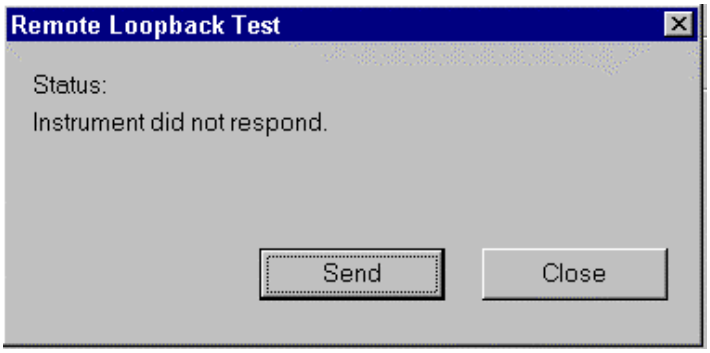


Figure 8-5 Remote Loopback Test Dialog

The status window will read either –

Instrument responded - Connection is OK
Instrument responded but response is garbled – Check for bad/noisy connection, or
Instrument did not respond - Check connections.



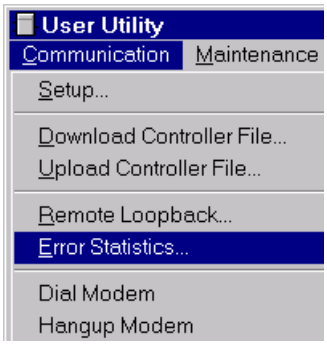
3. Click Close.

8.6 Error Statistics

The Error Statistics option on the Communication menu displays a Communication Error Summary dialog box that indicates the types and number of communication errors.

To display the Communication Error Summary dialog:

1. Click on the Error Statistics option on the Communication Menu.



The Communication Error Summary dialog is displayed. Table 8-2 defines the different categories of errors listed in the dialog.

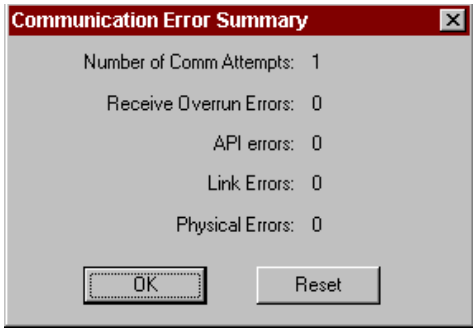


Figure 8-6 Communication Error Summary Dialog

Table 8-2 Error Summary Descriptions

Communication Error	Description
Number of Comm Attempts	The number of attempts made to communicate to the controller
Receive Overrun Errors	Receive buffer sized to small, or Noise on the communication line filling up the receive buffer.
API errors	Instrument rejected request.
Link errors	Garbled data, bad CRC
Physical errors	Bad parity, framing, baud rate, timeout error

2. Click on Reset to zero out the summary, if desired.
3. Click on OK to close the dialog.

8.7 Dial Modem (Remote Controller Access)

8.7.1 Overview

Remote controller access via dial-up modem is available via the communication setup. An external modem is required at the controller and is connected to the standard RS232 configuration port. Remote access functions include on-line monitoring, configuration upload and download.

8.7.2 Modem requirements

Some commercially available modems can be used with the UMC800 controller. Honeywell has identified four commercially available nodems for use with the UMC800. The modem must have the following capabilities:

- RS232 interface
- Auto answer
- Can operate at 9600 baud, 8 data bits, 1 stop bit, and no parity
- Hardware handshaking can be disabled
- Software handshaking can be disabled
- Data Terminal Ready (DTR) input can be disabled
- Result codes can be suppressed
- Echo can be disabled
- Must be equipped with non-volatile memory (NVRAM) so that settings that are configured using command strings can be retained during a power-outage
- Must be able to load the NVRAM settings automatically on power-up

REFER TO THE CONTROLLER INSTALLATION GUIDE # 51-52-25-61 FOR RECOMMENDED MODEMS.

8.7.3 Cable requirements

You will need an interface cable to connect the modem to the DB-9 female connector on the UMC800. If your modem has a 25-pin connector, be sure to use a DB-25 to DB-9 **modem** cable.

If your modem requires command string configuration, you will need an interface cable to connect the modem to your PC. Refer to your modem and computer documentation to determine this cable's requirements.

8.7.4 Modem configuration

Before connecting a modem to the UMC800 RS232 port, the modem must be configured with the following settings:

- Baud Rate = 9600
- Parity = None
- 1 stop bit
- 8 data bits
- No handshaking
- Ignore DTR
- Suppress result codes

- Suppress echo
- Auto answer
- Disable command recognition (only necessary if the modem has this capability)

Some of these settings may be settable via switches. Others may require command strings to be written to the modem using a PC terminal program such as Hyperterminal. You will need to refer to your modem's documentation to make this determination. Those settings that are configured using command strings must be saved to the modem's non-volatile RAM (NVRAM), and the NVRAM must be configured as the profile that gets loaded when the modem is powered up.

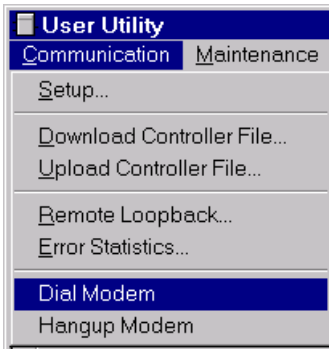
Most modems are equipped with auto-recognition to set the baud rate, parity, stop bits, and data bits. If your modem has no means of setting these using switches, then most likely it is equipped with auto-recognition. To configure the port settings of a modem with auto recognition, do the following:

Step	Action
1	Connect the modem to a PC.
2	Power up the modem.
3	Start up a PC terminal program such as Hyperterminal.
4	Configure the port for 9600 baud, no parity, 1 stop bit, and 8 data bits.
5	Establish communications with the modem. *A common way of doing this is simply entering the AT E1 Q0 command and seeing if the modem responds with OK* Once you establish communication to the modem, its port settings are configured.
6	Save the port settings to the profile that gets loaded on power-up.

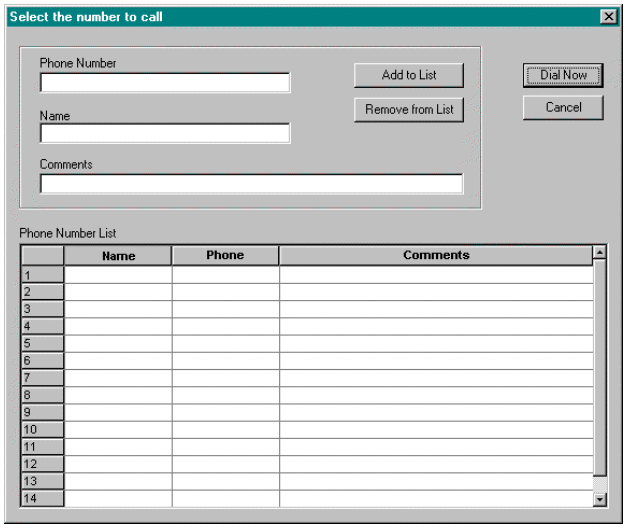
8.7.5 Using Remote Access

From the Main Window Communications menu, select " Dial Modem".

Note that the communication menu contains "Dial modem" and "hangup modem". This "global dialler" is the only place from which to make a phone call; if you have selected "modem" in communications setup but have not dialed, the global dialer will be activated for you when you try to perform a communications operation.



The "Select the Number to Call" dialog box will appear.



To ADD a Phone Number
Type In the Phone Number, Name, and Comments in their respective fields, then click on "ADD to List". The information will appear in the Phone Number List below.

The following pause characters can be added to the phone number in the phone list:

- **,** Pause for a fixed time, typically 2 seconds
- **!** Hookflash (½ sec. on-hook, ½ sec. off hook)
- **W** Wait for one second of dial tone
- **@** Wait for quiet answer (Ring back followed by five secons of silence)
- **$** Wait for calling-card prompt ("bong") tone
- **?** Ask for input before dialing continues

To DELETE a Phone Number
Click on a name or number in the Phone Number List and click "Remove from List". The line will be deleted and all the Phone numbers and names will move up one line.

To SELECT a number to call
Click on a name or number in the Phone Number List and click "Dial Now".

To **Hang Up** a call, select "Hangup Modem" from the Communications Menu in the main Window. A message will ask you to confirm that you want to hang up.

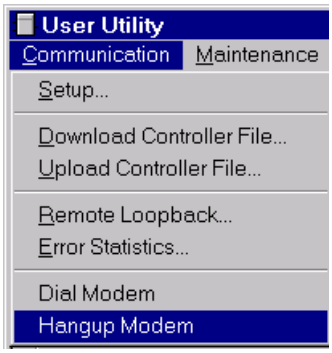
Application tip: *If you leave a live monitor window open, the application will never hang up on its own because the live monitor is a communications operation. Don't leave a live monitor window open over a long-distance call, it won't hang up automatically.*

8.7.6 Status Bar Indication

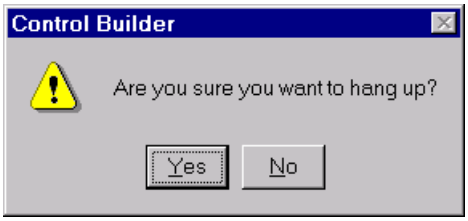
At startup:	"Telephone Connection Status"
When dialing:	"Call Connecting"
When connected:	"Call Connected" (name from 'Select Number to Call' dialog box)
When disconnected:	"Not Connected"

8.8 Hang Up Modem

To **Hang Up** a call, select "Hangup Modem" from the Communications Menu in the main Window.



A message will ask you to confirm that you want to hang up.



Select "Yes" or "No".

9. Maintenance Menu

9.1 Overview

The Maintenance Menu (see Figure 9-1) contains the following items:

- Diagnostic Summary
- I/O Module Diagnostics
- Modbus Communications Diagnostics
- Set Controller Time
- Set Controller Comm A Port
- Set Controller Comm B Port
- Calibrate AI
- Calibrate AO
- Download Controller Code

Each of these items will be discussed in detail in this chapter.

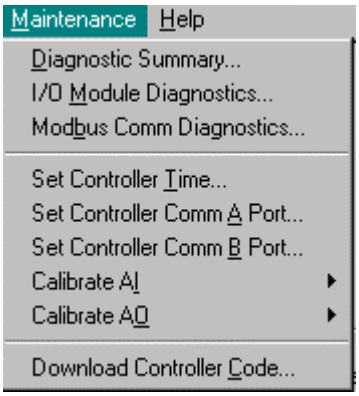


Figure 9-1 Maintenance Menu

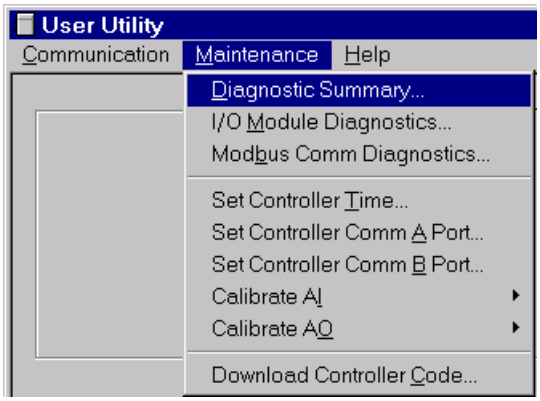
9.2 Diagnostic Summary

The User Utility provides live monitoring of Controller diagnostics. The controller executes diagnostic routines during controller start-up and during on-line operation.

Follow the steps below to access the Controller Diagnostic Summary dialog box.

To access the Controller Diagnostic Summary:

1. Click on the Diagnostic Summary option on the Maintenance menu.



The Controller Diagnostic Summary dialog is displayed. The dialog shows live diagnostic data from the controller that is updated at approximately once per second. See Figure 9-2. Refer to Table 9-1 for status indications, possible cause, and actions to correct the condition. It may be necessary to contact the equipment OEM or Honeywell to correct some problems.

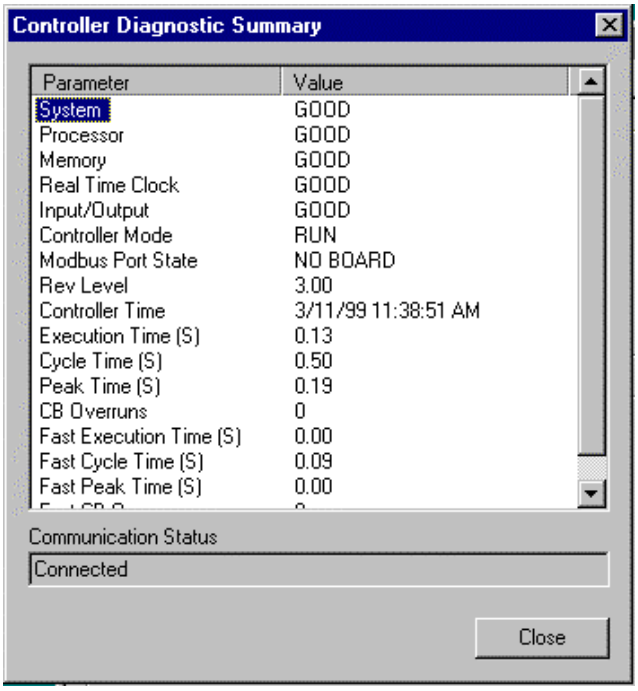


Figure 9-2 Diagnostic Summary Dialog

2. Click on Close to exit the dialog.

Table 9-1 Details of Controller Diagnostic Summary

Class	Status	Possible Cause	Controller Action	User Action
SYSTEM	GOOD	Controller is in RUN mode.	Executes the run mode. Outputs are updated.	None
	OFFLINE MODE	Controller is in OFFLINE mode.	Allows calibration. Outputs are disabled.	Return to RUN mode as appropriate.
	PROGRAM MODE	Controller is in PROGRAM mode.	Controller outputs are disabled.	Return to RUN mode as appropriate.
	INVALID CONFIG	A configuration of more than 8 loops was downloaded to an 8 loop controller.	Empty database created.	Download previous valid configuration.
	SWITCH FAULT	Bad switch	Controller outputs are disabled.	1. Toggle controller switch between RUN and PROGRAM. 2. Replace CPU board.
	TASK FAULT	Software failure	Controller outputs are disabled.	1. Force a cold start by toggling controller switch between PROGRAM and RUN. 2. Upgrade Controller software. 3. Replace CPU board. 4. Contact Honeywell service.
CPU (Processor)	GOOD	N/A	N/A	N/A
	WATCHDOG	Watchdog reset resulting from software failure.	Executes normally.	1. Force a cold start by toggling switch between PROGRAM and RUN. 2. Upgrade Controller software. 3. Replace CPU board. 4. Contact Honeywell service.
	BUS ERROR	Bus Error Detected	Executes normally.	1. Force a cold start by toggling switch between PROGRAM and RUN. 2. Isolate system from noise and force a cold start. 3. Replace CPU board.

Class	Status	Possible Cause	Controller Action	User Action
CPU (Processor) cont'd	ADDRESS ERROR	Address Error Detected	Executes normally.	1. Force a cold start by toggling switch between PROGRAM and RUN. 2. Isolate system from noise and force a cold start. 3. Replace CPU board.
	INSTRUCTION ERROR	Bad Instruction Detected	Executes normally.	1. Force a cold start by toggling switch between PROGRAM and RUN. 2. Isolate system from noise and force a cold start. 3. Replace CPU board.
	VECTOR ERROR	Bad Vector Interrupt	Executes normally.	1. Force a cold start by toggling switch between PROGRAM and RUN. 2. Isolate system from noise and force a cold start. 3. Replace CPU board.
	SPURIOUS INTERRUPT	Spurious Interrupt	Executes normally.	1. Force a cold start by toggling switch between PROGRAM and RUN. 2. Isolate system from noise and force a cold start. 3. Replace CPU board.
MEMORY	GOOD	N/A	N/A	N/A
	LOW BATTERY	Battery voltage is low.	Executes normally.	Replace battery.
	FLASH ERROR	Flash failed to burn.	Executes normally.	1. Force a cold start by toggling switch between PROGRAM and RUN. 2. Replace CPU board.
RTC (Real Time Clock)	GOOD	N/A	N/A	N/A
	NOT PROGRAMMED	RTC not programmed	Time and date is set to 00:00:00, January 1, 1970.	Program Real Time Clock (RTC). (See Set Calibration Time.)
	BAD DATA	Bad date and time	Time and date is to 00:00:00, January 1, 1970.	1. Program RTC 2. Disconnect then reconnect power. 3. Replace CPU. 4. Replace boards in backplane. 5. Replace backplane.

Class	Status	Possible Cause	Controller Action	User Action
RTC (Real Time Clock)	BATTERY FAILURE	RTC battery failed on power-up.	Time and date is set to 00:00:00, January 1, 1970.	If LO BAT LED is OFF, cycle power. If LO BAT LED is ON, replace battery and cycle power.
	PROGRAMMING FAILURE	RTC failed to program.	Time and date is set to 00:00:00, January 1, 1970.	1. Program RTC. 2. Disconnect then reconnect power. 3. Replace CPU. 4. Replace boards in backplane. 5. Replace backplane.
	READ FAILURE	Unable to read RTC.	Time and date is set to 00:00:00, January 1, 1970.	1. Program RTC. 2. Disconnect then reconnect power. 3. Replace CPU. 4. Replace boards in backplane. 5. Replace backplane.
I/O (Input/Output)	GOOD	N/A	N/A	N/A
	MODULE ERROR	One of the I/O board diagnostics failed.	N/A	Access the I/O Module diagnostics display.
	BAD BACKPAN	Bad backplane EEPROM	Analog inputs use default coefficients.	1. Disconnect then reconnect power. 2. Replace backplane board.
	BAD BACKPAN ID	Incompatible backplane board	Analog inputs use default coefficients.	1. Disconnect then reconnect power. 2. Replace backplane board.
PANEL (OI)	NORMAL	N/A	N/A	This status will be good even if certain modules are not configured in the Controller.

Class	Status	Possible Cause	Controller Action	User Action
COMM A Port Status	GOOD	N/A	N/A	N/A
	REQUIRES SETUP	Both the Comm Port and the main CPU board have a default address (255).	PORT setting is set to disabled.	Initialize the Modbus address.
	FORCED OFFLINE	The main CPU and Comm Port had a configuration mismatch.	If the Comm Port had a default address, the main CPU settings are used. If the main CPU had a default address, the Comm Port settings are used. If the main CPU and the Comm Port both had valid addresses, the Comm Port settings are used. In all cases, the PORT setting is set to disabled.	Check Modbus settings and set PORT to enabled.
	BOARD FAILURE	The Comm Port hardware has a serious failure.	Executes normally.	Replace Comm Port.
	BOARD NOT FOUND	The control file has a non-default address and no Comm Port is installed.	Executes normally.	Install Comm Port or set address to 255.
COMM B Port Status	GOOD	N/A	N/A	N/A
	BOARD FAILURE	The Comm Port hardware has a serious failure.	Executes normally. All Modbus Read block outputs are frozen at their last values.	Replace Comm Port.
	BOARD NOT FOUND	The control file configuration requires a master Port and no Comm Port is installed.	Executes normally.	Install Comm Port or download a configuration that has no Modbus Slave blocks.

Communication Status

The Communication Status window shoes the current status of communication with the controller.

9.3 I/O Module Diagnostics

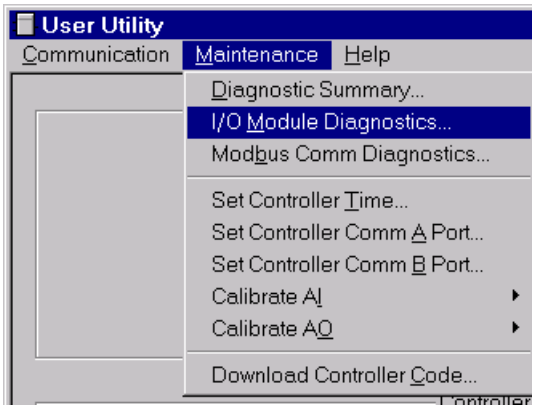
The User Utility provides live monitoring of I/O Module diagnostics. The instrument executes diagnostic routines during instrument start-up and during on-line operation.

Follow the procedure listed below to access the I/O Module Diagnostic Summary dialog box.

Refer to Table 9-2 for status indications, possible cause, and actions to correct the condition. It may be necessary to contact the equipment OEM or Honeywell to correct some problems.

To access the I/O Module Diagnostic dialog:

1. Click on the I/O Module Diagnostic option on the Maintenance menu.



The I/O Module Diagnostics dialog is displayed. See Figure 9-3.

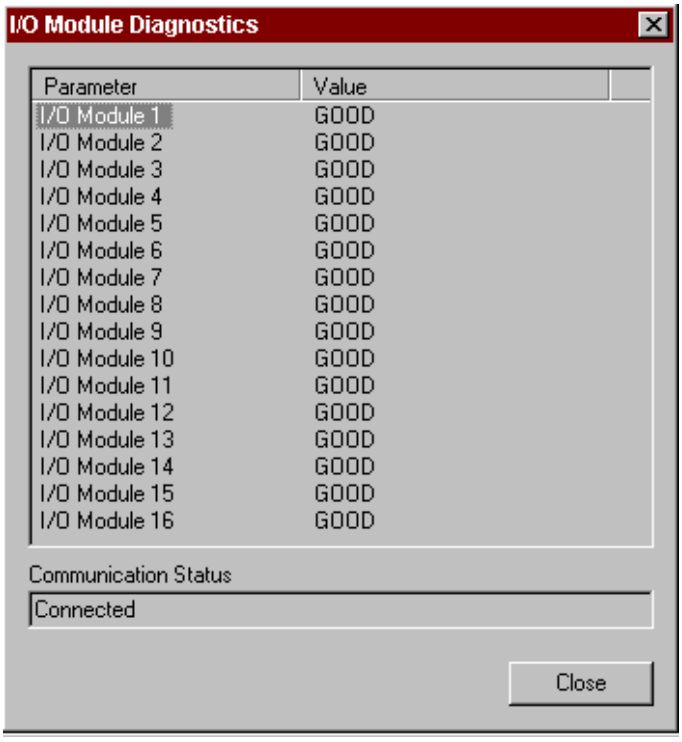


Figure 9-3 I/O Module Diagnostic Dialog

Table 9-2 Details of I/O Module Diagnostic Summary

Class	Status	Possible Cause	Controller Action	User Action
I/O MODULE 1 through I/O MODULE 16	GOOD	Module matches the configuration OR the module is not present in the control configuration.	N/A	N/A
	HI CJ TEMPERATURE	High cold junction temperature on AI module.	Executes normally.	1. Improve ventilation to rack. 2. Replace AI module.
	WRONG MODULE	The module does not agree with the module required for the control configuration.	These block types do the following: AI - sets its output to failsafe DI - sets its output to OFF	Replace module or check configuration.
	NO MODULE	No module found in the slot that requires a module for the control configuration.	These block types do the following: AI - sets its output to failsafe DI - sets its output to OFF	Install the module.
	BAD MODULE	Analog input or analog output board does not have factory coefficients, or the I/O board is not a supported type.	If the error is an analog input board with no factory coefficients, default coefficients will be used for the cold-junction calculations. If the error is an analog output board with no factory coefficients, default coefficients will be used for the outputs. If the board is an unsupported type, these block types do the following: AI - sets its output to failsafe DI - sets its output to OFF	Replace module.

Communication Status

The Communication Status window shoes the current status of communication with the controller.

9.4 Modbus Comm Diagnostics

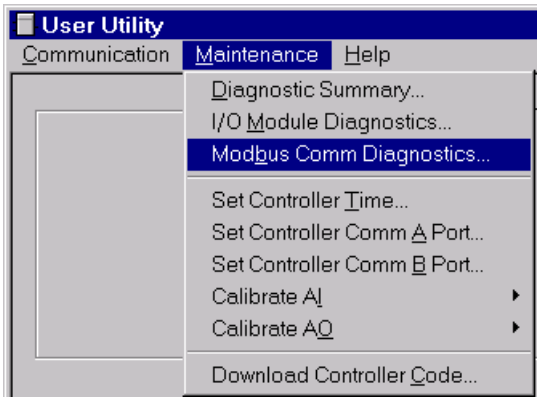
Introduction

The Modbus Communications Diagnostic dialog box provides you with a list of slave devices, their tag names, addresses and whether they are in scan or not-in-scan. Refer to Table 9-3 for diagnostic information and troubleshooting.

Accessing Modbus Communications Diagnostics

To access Modbus Communications Diagnostics:

Click on the Modbus Comm Diagnostic option on the Maintenance menu



The “Modbus Communications Diagnostics” dialog box will open. See Figure 9-4

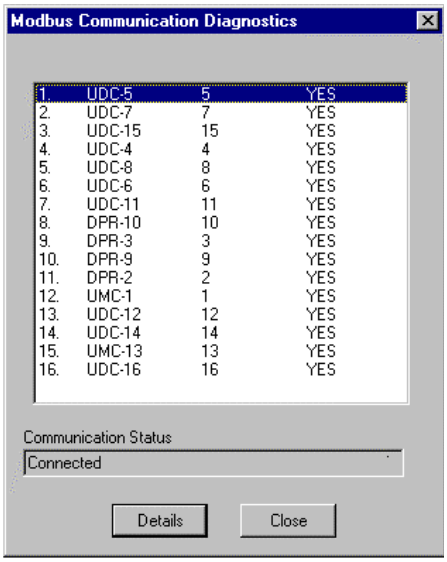


Figure 9-4 Modbus Communications Diagnostics dialog

Select a Device for Details

Select a device in the dialog box then press the “DETAIL” button.

The “Modbus Slave Detail” dialog box will open. See Figure 9-5

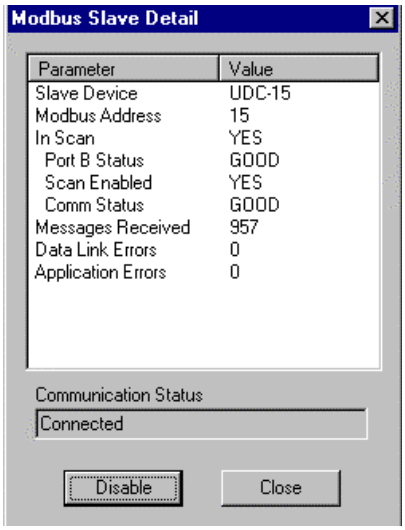


Figure 9-5 Modbus Slave Detail dialog

It provides the following diagnostic information:

Slave Device Tag Name

Modbus Address

In Scan - Yes or No

Port B Status

Scan Enable - **Click ENABLE to change to YES or NO**

Communications Status Value - Good, Bad, None

Messages Recieved

Data Link Errors

Application Errors

Modbus Slave Detail Parameters and Troubleshooting

Table 9-3 lists the parameters shown in the Modbus Slave Detail dialog box and a description of the values that may appear plus troubleshooting information.

Table 9-3 Modbus Communications Diagnostics

Feature	Description
IN SCAN	YES: scan is functioning for that device. NO: scan is not functioning for that device. Caused by one of the following: PORT B STATUS is not GOOD. SCAN ENABLED is NO. COMM STATUS is NONE or BAD.
PORT B STATUS	GOOD: Comm board is installed and functioning normally. NO BOARD: No comm board is present and the address is default 255. *Download a configuration that uses the slave device.* BOARD FAILURE: The comm board hardware has a serious failure. For example, the EEPROM failed when being written. In this condition, all communications on the Modbus link are ignored. *Replace comm board*. BOARD NOT FOUND: No comm board is installed and the address is non-default (1-254). *Install comm board or set address to 255.*
SCAN ENABLED	YES: Scan is enabled from ENABLE SCAN below. NO: Scan is disabled. *Click on the "Enable/Disable" button on the "Detail" dialog box to change from one to another.*
COMM STATUS	GOOD: The slave is being scanned at the normal scan rate because its operation on the communication link is acceptable. NONE: Slave device is not defined in the control database. *Download a configuration that includes the device.* BAD: The slave device is being scanned at a slower rate because it has experienced an abnormal number of failed responses. *Perform these checks:* • *If all slaves report BAD comm status, check the communication link connection to the master port. Ensure that the correct polarity is observed. If this is OK, check the connection to the first slave in the daisy-chain.* • *Check the communication link connection to the slave. Ensure that the correct polarity is observed.* • *Check that the slave is powered-up.* • *Check that the slave has the correct address.* • *Check that the slave has the correct baud rate, and its polarity is none.*
MESSAGES RECEIVED	Number of messages received from this slave since the last cold start.
DATA LINK ERRORS	Number of data link errors for this slave since the last cold start. Data link error may be caused by line noise.
APPLICATION ERRORS	Number of application errors for this slave since the last cold start. Application error may be caused by trying to write to a read-only address.
ENABLE SCAN	Select this to enable scan for this slave. SCAN ENABLED should change to YES.

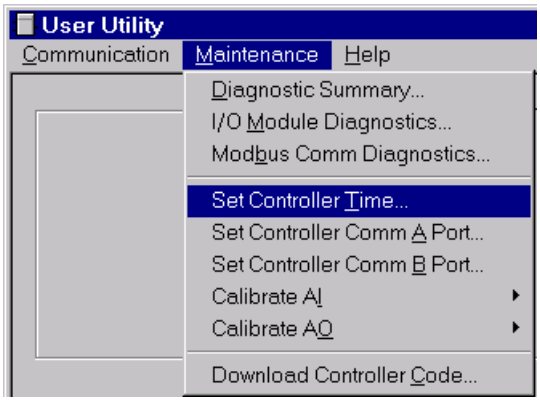
Bold items are read-only.

9.5 Set Controller Time

The Set Controller Time option on the Maintenance menu downloads the current PC time and date to the controller.

To set the controller time:

1. Click on the Set Controller Time option on the Maintenance menu.



2. The Set Instrument Time dialog is displayed. See Figure 9-6.

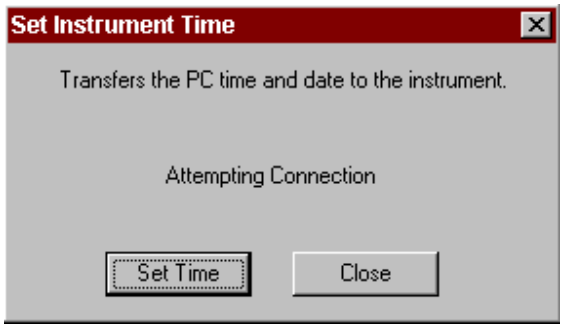


Figure 9-6 Set Instrument Time Dialog

3. Click on Set Time to download the time and date to the controller. The status of the download is displayed in the center of the dialog.
4. Click on Close when the status indicates the download is complete.

ATTENTION

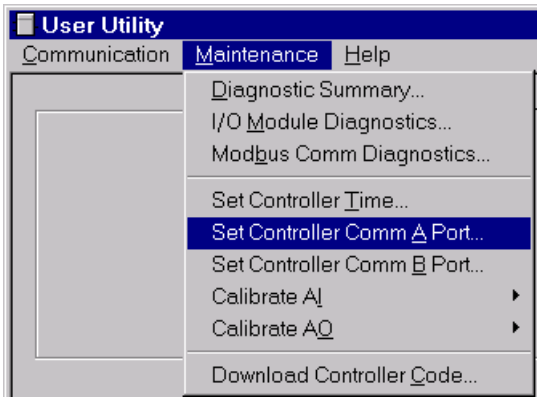
You can check the controller time using the Controller Diagnostic screen. See Figure 9-2.

9.6 Set Controller Comm A Port

An optional serial communication card is available that provides two RS485 serial communication ports. Both ports support the Modbus RTU protocol, one functioning as a Slave, the other as a Master.

To set up the Comm A port:

1. Click on the Set Controller Comm A Port option on the Maintenance menu.



The Set Up Controller Comm A Port dialog box is displayed. See Figure 9-7.

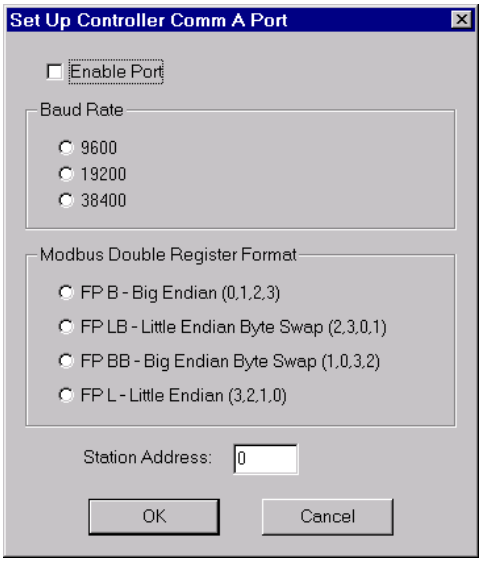


Figure 9-7 Set Up Controller Comm A Port Dialog

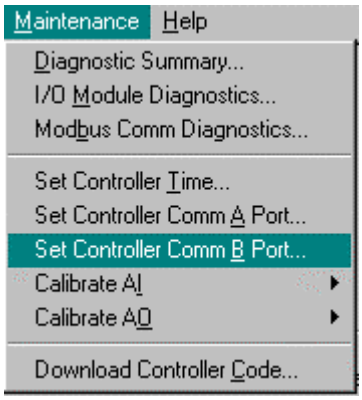
2. Click on the Enable Port check box to enable the Comm A port.
3. Click on the appropriate radio button to select the baud rate.
4. Click to select Word/Byte order for floating point communications data.
5. Enter the Station Address which is the device address of the controller connected on a Modbus link. NOTE: The address must be a number between 1 and 247.
6. Click OK to complete Comm A port set up and close window.

9.7 Set Controller Comm B Port

An optional serial communication card is available that provides two RS485 serial communication ports. Both ports support the Modbus RTU protocol, one functioning as a Slave, the other as a Master.

To set up the Comm B port:

1. Click on the Set Controller Comm B Port option on the Maintenance menu.



The Set Up Controller Comm A Port dialog box is displayed. See Figure 9-8

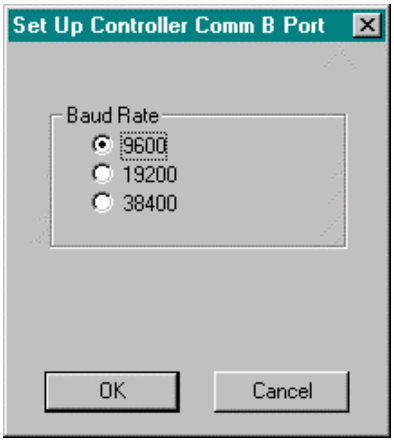


Figure 9-8 Set Up Controller Comm b Port Dialog

NOTE: If you have selected “MODEM” Com Link on the “Communications Set Up” dialog box, a “Select a Number to Call” dialog box will appear. Select the phone number to be contacted.

9.8 Calibrate AI

The Calibrate AI option on the Maintenance menu gives you access to the following functions:

- Calibrate AI Channel
- Calibrate CJ Temp
- Copy Calibration
- Restore AI Factory Calibration
- Restore CJ Factory Calibration

Each of these options will be discussed in detail in this section.

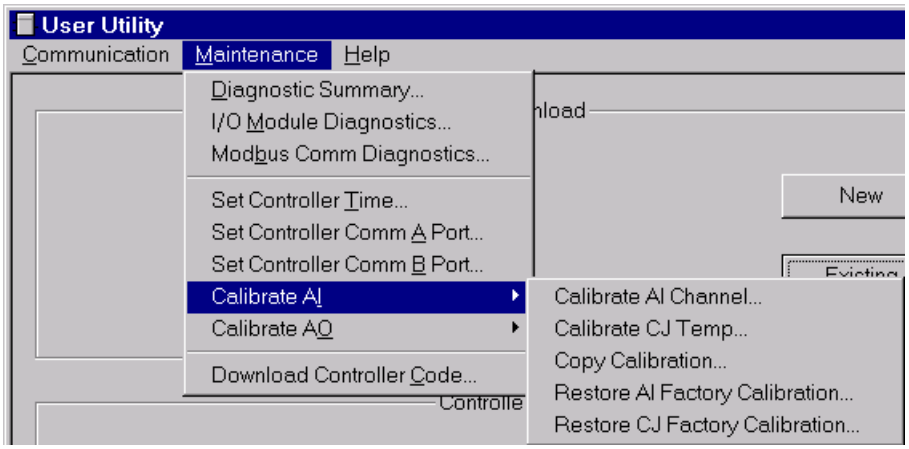


Figure 9-9 Calibrate AI Menu

9.8.1 Calibrate AI Channel

The Calibrate AI Channel option allows you to test the selected AI to ensure that the 0 and 100% values selected during configuration are actually correct.

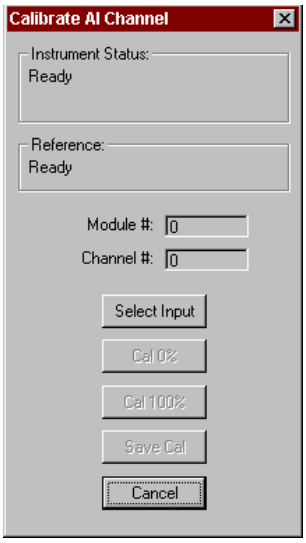
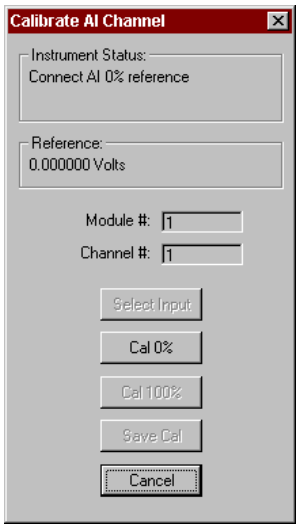


Figure 9-10 Calibrate AI Channel Dialog

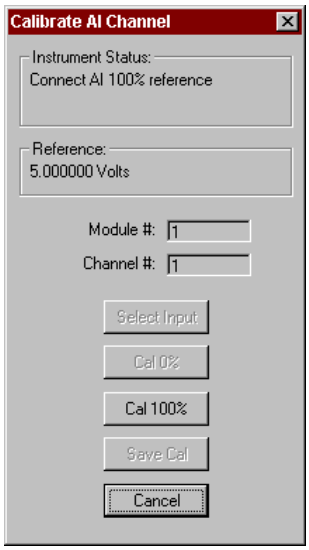
To calibrate an AI Channel:

1. Select Calibrate AI Channel from the Calibrate AI menu. The Calibrate AI Channel Dialog is displayed. See Figure 9-10.
2. Enter a Module # and Channel #.
3. Click on Select Input. The User Utility will then poll the controller to see if the selected AI exists.
4. The Cal 0% button is now available. Connect a reference supply to the input pins of the AI. (An Ice Point reference is needed when calibrating a non-linear range of a controller.) Set the reference supply to the reference value shown. (The reference value is displayed below the Instrument Status section.) Click on Cal 0% to calibrate the low end of the AI.



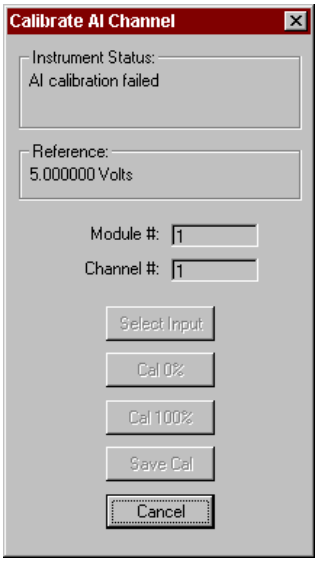
The Instrument Status section of the dialog will display the results of the test.

5. If the 0% calibration was successful, the 100% button is now available. Set the reference supply to the reference value shown. Click on Cal 100% to calibrate the high end of the AI.



6. If the Cal 100% calibration was successful, the Save Cal button is then available. Click on Save Cal to save the current set of calibrations for the selected AI.

If either of the tests fail, the Instrument Status section will display an AI Calibration Failed message.



7. Click on Cancel to close dialog.

9.8.2 Calibrate CJ Temperature

The Calibrate CJ Temperature option allows you to ensure the Cold Junction calibration is correct.

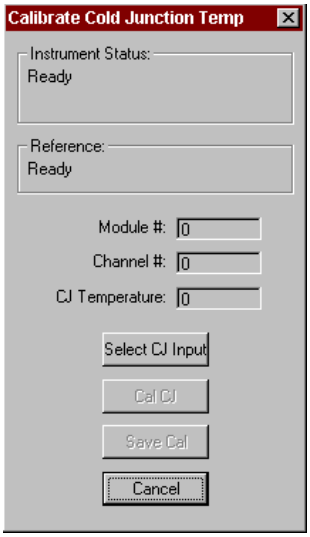
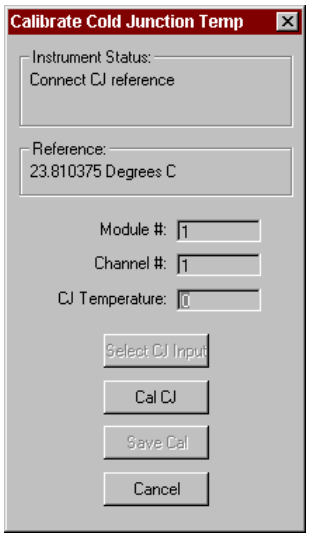


Figure 9-11 Calibrate CJ Temperature Dialog

To calibrate a CJ Temperature:

1. Select Calibrate CJ Temperature from the Calibrate AI menu. The Calibrate CJ Temperature Dialog is displayed. See Figure 9-11.
2. Enter a Module # and Channel #.
3. At CJ Temperature, enter the actual ambient temperature (measured at the AI pins).
4. Click on Select CJ Input. The User Utility will then poll the controller to see if the selected AI exists. If the AI is found the Cal CJ button will then be available.



5. Click on the Cal CJ button to initiate the calibration. The status of the calibration is displayed in the Instrument Status section of the dialog. If the calibration is successful, the Save Cal button will be available.
6. Click on the Save Cal button to save the current CJ calibration.

   If the calibration fails, a message will be displayed in the Instrument status section.
7. Click on Cancel to close dialog.

9.8.3 Copy Calibration

The Copy Calibration option is used to transfer a calibration from one AI to another AI.

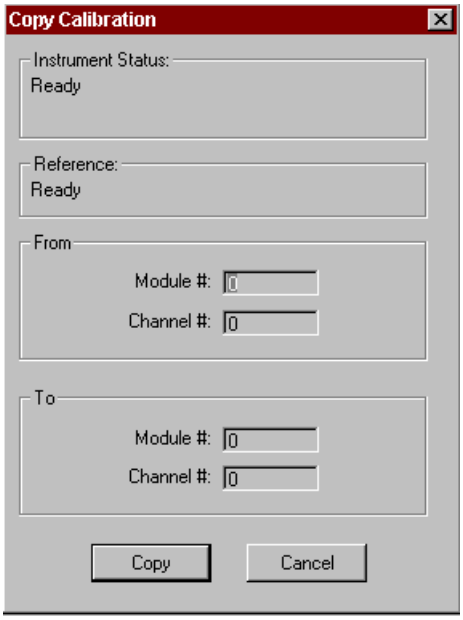


Figure 9-12 Copy Calibration Dialog

To copy the calibration:

1. Select Copy Calibration from the Calibrate AI menu to display the dialog box shown in Figure 9-12.
2. Enter the Module and Channel number of the source AI in the From section.
3. Enter the Module and Channel number of the destination AI in the To Section.
4. Click on the Copy button to initiate the transfer. The status of the transfer will be displayed in the Instrument Status section of the dialog.
5. Click on Cancel to close the dialog once the copy is complete.

9.8.4 Restore AI Factory Calibration.

The Restore AI Factory Calibration option allows you to restore the AI calibration to its factory default value.

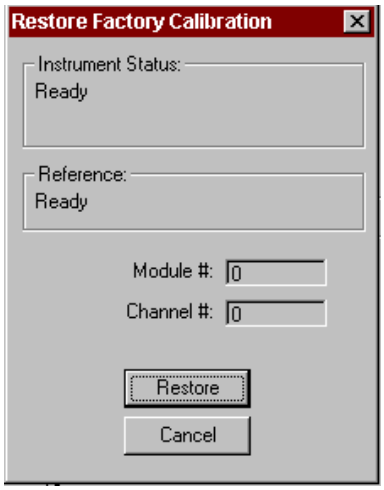


Figure 9-13 Restore AI Factory Calibration Dialog

To restore the AI Factory Calibration:

1. Click on the Restore AI Factory Calibration option on the Calibrate AI menu. The Restore Factory Calibration dialog is displayed. See Figure 9-13.
2. Enter the Module and Channel number for the desired AI.
3. Click on Restore to initiate the task. The status of the restore will be displayed in the Instrument Status section of the dialog.
4. Click on Cancel to close the dialog when the restore is complete.

9.8.5 Restore CJ Factory Calibration

The Restore CJ Factory Calibration option allows you to change the calibration for the selected CJ to its factory default value.

To restore the CJ Factory Calibration:

1. Click on the Restore CJ Factory Calibration option on the Calibrate AI menu. The Restore Factory Calibration dialog is displayed. See Figure 9-13.
2. Enter the Module and Channel number for the desired AI.
3. Click on Restore to initiate the task. The status of the restore will be displayed in the Instrument Status section of the dialog.
4. Click on Cancel to close the dialog when the restore is complete.

9.9 Calibrate AO

The Calibrate AO option on the Maintenance menu gives you access to the following functions:

- Calibrate AO Channel
- Restore AO Factory Calibration

Each of these options will be discussed in detail in this section.

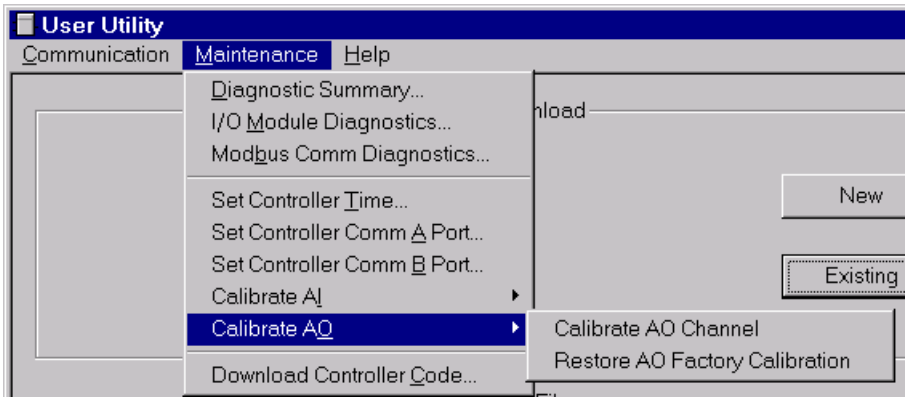


Figure 9-14 Calibrate AO Menu

9.9.1 Calibrate AO Channel

The Calibrate AO Channel option allows you to test the selected AO to ensure that the 0 and 100% values selected during configuration are actually correct

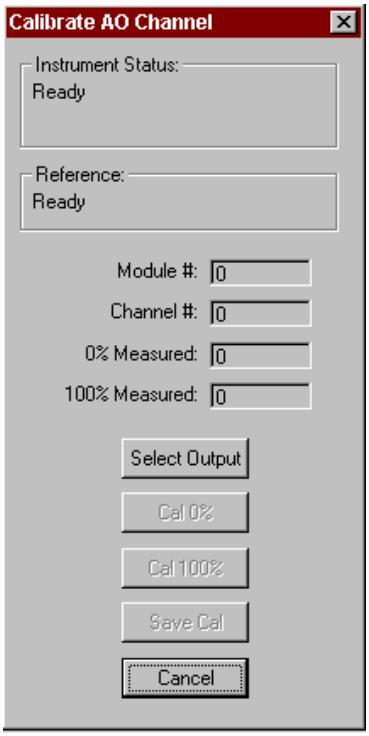
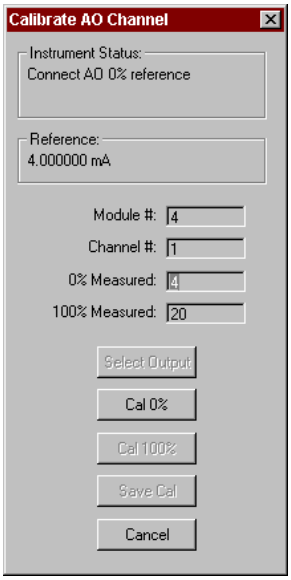


Figure 9-15 Calibrate AO Channel Dialog

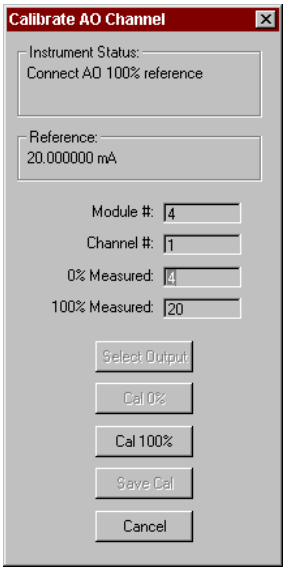
To calibrate an AO Channel:

1. Select Calibrate AO Channel from the Calibrate AO menu. The Calibrate AO Channel Dialog is displayed. See Figure 9-15.
2. Enter a Module # and Channel #.
3. Click on Select Output. The User Utility will then poll the controller to see if the selected AO exists.
4. The Cal 0% button is now available. Measure the actual output of the AO at the terminal block with a meter and enter the measurement into 0% Measured. Click on Cal 0% button to calibrate the 0% measurement. The reference value is displayed below the Instrument Status section.

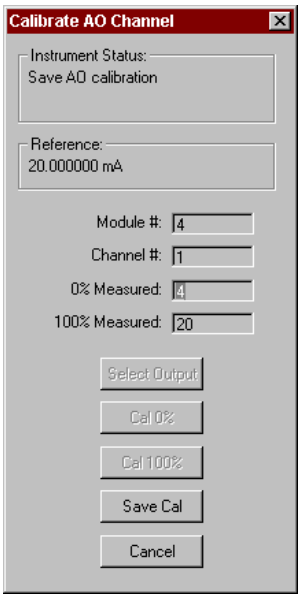


The Instrument Status section of the dialog will display the results of the test.

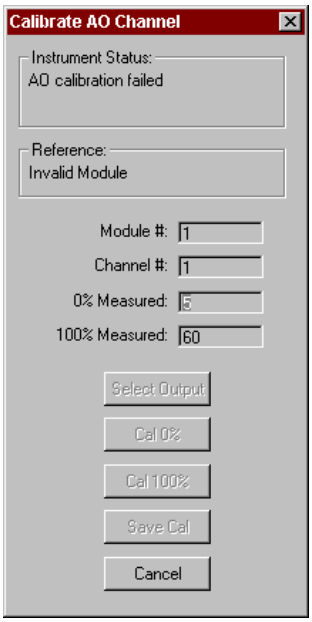
5. If the 0% calibration was successful, the 100% button is now available. Measure the actual output of the AO at the terminal block with a meter and enter the measurement into 100% Measured. Click on Cal 100% button to calibrate the 100% measurement.



6. If the Cal 100% was successful, the Save Cal button is then available. Click on Save Cal to save the current set of calibrations for the selected AO.



If either of the tests fail, the Instrument Status section will display an AO Calibration Failed message.



7. Click on Cancel to close dialog.

9.9.2 Restore AO Factory Calibration

The Restore AO Factory Calibration option allows you to restore the calibration for the selected AO back to its factory default value.

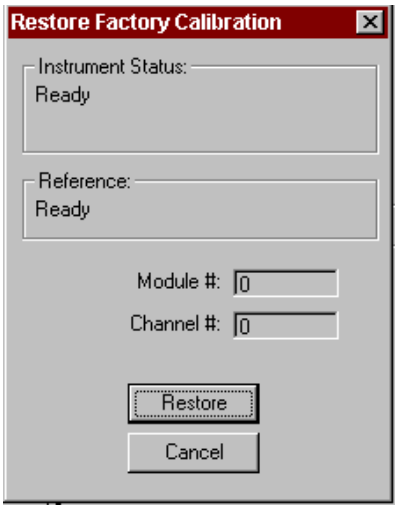


Figure 9-16 Restore Factory Calibration Dialog

To restore the AO Factory Calibration:

1. Click on the Restore AO Factory Calibration option on the Calibrate AO menu. The Restore Factory Calibration dialog is displayed. See Figure 9-16.
2. Enter the Module and Channel number for the desired AO.
3. Click on Restore to initiate the task. The status of the restore will be displayed in the Instrument Status section of the dialog.
4. Click on Cancel to close the dialog when the restore is complete.

9.10 Download Controller Code

The Download Controller Code option on the Maintenance menu allows you to download a version of the controller firmware code to the controller. The download code utility will load a UMC firmware upgrade file (*.s19) into the controller's CPU RAM. The Download File dialog displays the name of the current file, the status of the process and the percent complete. See Figure 9-17.

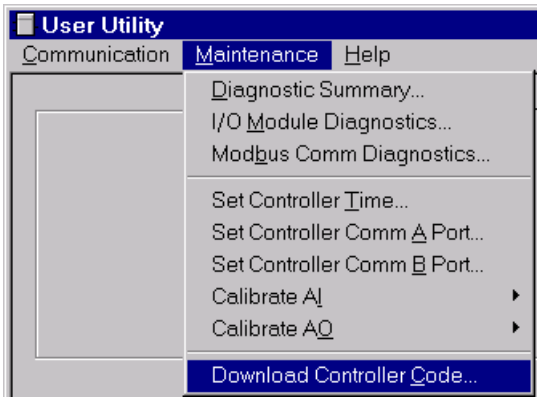
CAUTION

Before performing a code download:

- Perform a back up all controller configuration files.
- Be certain that the controller does not show a low battery (LoBatt) diagnostic. The user utility will not allow a code download to a controller if a low battery diagnostic is present.

To perform a code download:

1. Connect PC to the controller.
2. Make sure the communications setup is correct.
3. Select Download Controller Code option from the Maintenance menu. The Open dialog is displayed.
4. Perform a Controller Upload File to save the controller configuration.



5. Highlight the desired UMC firmware file (*.s19) and click on Open.

The Code Download dialog will be displayed along with the status of the download. See Figure 9-17.

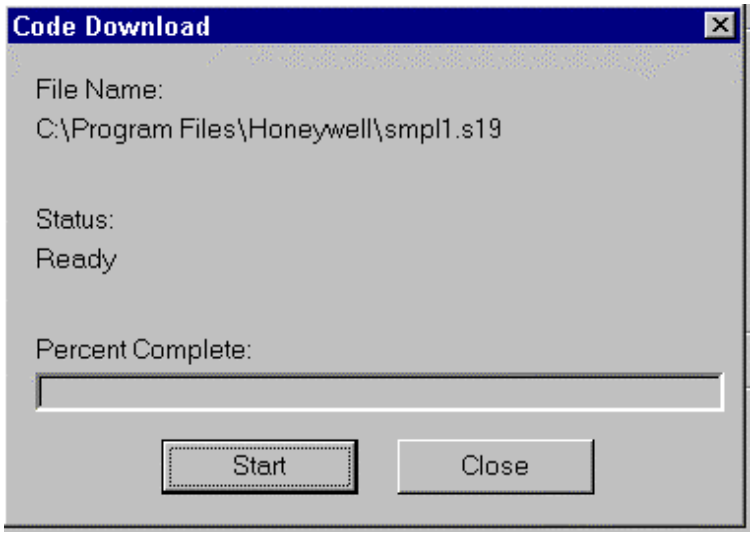


Figure 9-17 Code Download Dialog

6. Click on Start and the file will be downloaded. The dialog box will show the percent complete of the download process.
   NOTE: The download of the file to the controller will take a considerable amount of time.
7. Click on Close when the download is complete.

The controller now contains the new version of firmware and an empty configuration file.

8. Perform a Download Controller File to reload the controller's configuration files, recipes, profiles and schedules.

10. Help System

10.1 Overview

This section briefly describes the help system included with the **User Utility**, and gives instructions on how to use the different types of help offered with the program.

The User Utility On-line help system uses the same conventions as Help for Windows ’95, ’98 and “NT” regarding the following:

- Help window
- Accessing help from the help menu
- Help system’s contents page
- F1 key
- Search Function

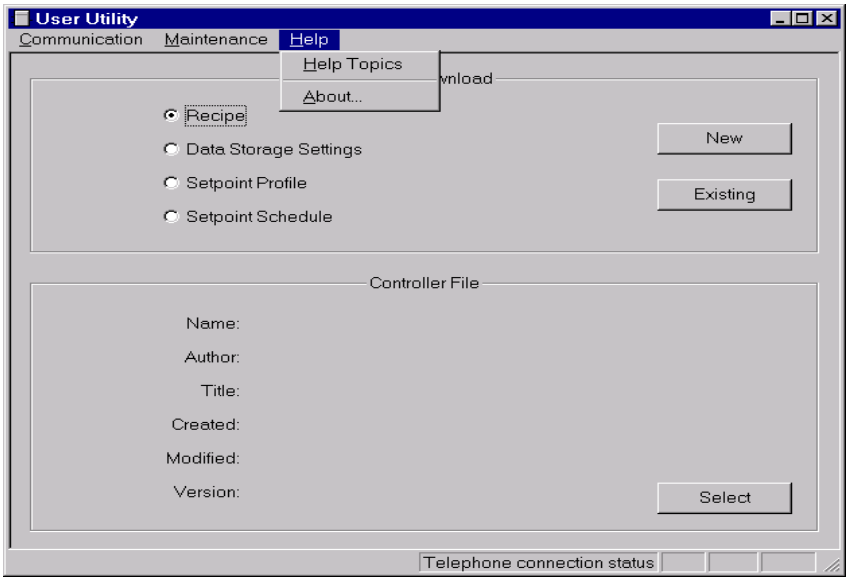


Figure 10-1 Help Menu

10.2 On-line Help System

The on-line help system offers a convenient and quick way to get information about the task that you are performing in the User Utility program.

The help system offers context-sensitive help which means that at any time you request help, a help topic appears that pertains specifically to where you are in the program.

For example, if you are focused on a particular program window, dialog box, or entry field, you will get a help topic that describes that particular area.

10.2.1 Requesting Help

To request Help on any area, use one of the following methods:

• HELP MENU

This is the last 7item on the menu bar. Choose a Help topic from the Help menu.

Help Topics

From the Help menu, click “Help Topics”. The Help Contents tab appears. This is a list of all Help topics available including Menus, Configuration Parameters, and Toolbar. Selecting a topic causes information about that topic to be displayed. If the information about a topic exceeds the height of the window, a vertical scroll barwill be displayed.

About . . .

Copyright or version information about the Honeywell **UMC800 User Utility**.

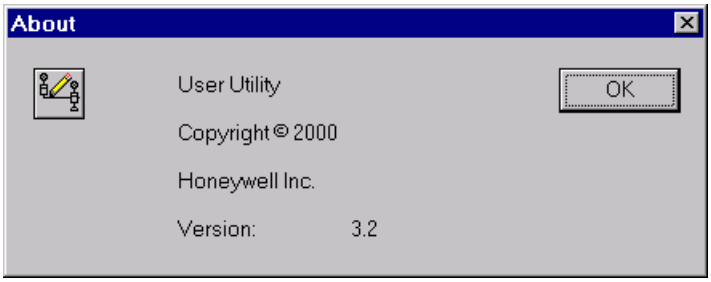


Figure 10-2 About Screen

• PRESS F1

Press F1 to get help in any of this area:

Configuration Dialog Boxes

Get a definition of any Dialog Box Parameter selection on the applications window

10.2.2 Help Navigation

When you finish reading about a topic, you can choose one of the commands along the top of the help window to navigate through the help system.

Contents	View the top-level Help Contents page.
Back	Return to previously viewed information. When you choose the Back button, you retrace your path through the help topics you have already viewed.
Exit	Exit the Help window.
>>	Move forward one help screen.
<<	Move back one help screen

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