Solutions Software
Class 9999 Type MLPS
Series E

a brand of
Schneider
   Electric

SQUARE D

3

Hazard Categories and Special Symbols

The following symbols and special messages may appear in this manual or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

A lightning bolt or ANSI man symbol in a "Danger" or "Warning" safety label on the equipment indicates an electrical hazard which, as indicated below, can or will result in personal injury if the instructions are not followed.

The exclamation point symbol in a safety message in a manual indicates potential personal injury hazards. Obey all safety messages introduced by this symbol to avoid possible injury or death.

Symbol	Name
	Lightning Bolt
	ANSI Man
	Exclamation Point

⚠ DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, **will result in** death or serious injury.

⚠ WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, **can result in** death or serious injury.

⚠ CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, **can result in** minor or moderate injury

CAUTION

CAUTION, used without the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, **can result in** property damage.

Before You Begin

Read and follow these precautions before performing any procedure with this software.

⚠ **DANGER**

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Read and understand this manual before installing or operating the Solutions Software on an industrial network. Installation, adjustment, repair, and maintenance must be performed by qualified personnel.
- The user is responsible for compliance with all international and national electrical code requirements with respect to grounding of all equipment.
- DO NOT touch unshielded components or terminal strip screw connections with voltage present.
- Before servicing:
  - Disconnect all power, including external control power that may be present.
  - Place a "DO NOT TURN ON" label on all power disconnects.
  - Lock all power disconnects in the open position.
  - Always use a properly rated voltage sensing device to confirm that the power is off.
- Install and close all covers before applying power or starting and stopping the network.

Failure to follow these instructions will result in death or serious injury

---

⚠ **DANGER**

UNINTENDED EQUIPMENT OPERATION

Test and ensure that any changes made to the parameter settings do not present any danger to personnel and equipment during operation.

Failure to follow these instructions will result in death or serious injury

---

⚠ **WARNING**

LOSS OF CONTROL

- The designer of any control scheme must consider the potential failure modes of control paths and, for certain critical control functions, provide a means to achieve a safe state during and after a path failure. Examples of critical control functions are emergency stop and overtravel stop.

- Separate or redundant control paths must be provided for critical control functions.

- System control paths may include communication links. Consideration must be given to the implications of unanticipated transmission delays or failures of the link.[1]

- Each implementation of a network node must be individually and thoroughly tested for proper operation before being placed into service.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

---

[1]   For additional information, refer to NEMA ICS 1.1 (latest edition), "Safety Guidelines for the Application, Installation, and Maintenance of Solid State Control" and to NEMA ICS 7.1 (latest edition), "Safety Standards for Construction and Guide for Selection, Installation and Operation of Adjustable-Speed Drive Systems."

Introduction

What Is Solutions Software?

The Solutions Software, Series D provides an avenue to monitor and control the Motor Logic® Plus overload relays over a network.

The Solutions software allows you to log data from Motor Logic® Plus overload relays or through various Motor Logic® display modules, such as the Motor Management System (MMS) or the Motor Logic® Plus Display modules (MLPD), into a file on a PC for later analysis.

This document describes how to install the software and describes its features. More detail about various topics in the software can be found in the Help dropdown menu, located on the Menu bar.

Package Contents

Solutions Software

- 1 USB Flash Drive
- 1 Converter, RS-232 to RS-485
- 1 Solutions Software Instruction Bulletin, 30072-013-99 (this document)

System and Hardware Requirements for the Solutions Software

To run the Solutions software, you will need the following:

- Windows® 98, Windows ME, Windows 2000, Windows NT, or Windows XP operating system
- A mouse
- A serial port
- 1 USB Port for Modbus® Communications
- Approximately 50 MB of hard disk space for installation

NOTE: Extra hard disk space may be required if data logging will be activated for extended periods.

Network Requirements

Modbus® Network

The Modbus network has three main components:

1. The Modbus master device
2. The RS-485 network
3. The Modbus slave devices

Only one Modbus master device is allowed on a network. For this application, the computer running the Solutions program is the Modbus master device.

For network wiring, use a pair of twisted, shielded cables of 18–24 AWG (0.82–0.20 mm^2). The total length of the network cable cannot exceed 4000 ft (1219.2 m). Refer to bulletin 30072-013-102, *Motor Logic® Plus Network Communications Module*, for more information on the RS-485 network, including information regarding cable connections, polarity problems, and terminating resistors. For termination guidance, refer to *Modbus Over Serial Line Specification* and *Implementation Guide V1.02*, Section 3.4.6 or go to Modbus website at www.Modbus-IDA.org for more information.

The following recommendation will work in some applications. If the network cable is more than 50 ft (15.24 m) but not greater than 100 ft (30.48 m) long, install terminating resistors at each end of the network cable. Use a 120 Ω resistor in series with a 0.001 μF capacitor between the A and B terminal for a terminator. If terminating resistors are used, an external 12 Vdc supply may be required to power the RS-232 to RS-485 converter supplied with the software.

Connecting the Computer to the RS-485 Network

Connect the computer to the RS-485 slave devices on the network using the RS-232 to RS-485 converter.

Only use converters that can automatically recognize that a byte of data is ready to be transmitted, and turn on the RS-485 transmitter for one character. This is often referred to as automatic send data control.

Installing the Software

Installing the Solutions Software

To install the Solutions software, insert the USB flash drive into an open USB port, and follow the wizard navigation screen prompts for input. The Solutions software will prompt you to complete the installation process.

If the software does not automatically install, it can be manually installed from the following location: [DriveLetter]:\Setup\Setup.exe. Double click the Setup.exe icon and follow the wizard navigation screen prompts.

Solutions Software Setup

After the Solutions software has been installed, the Welcome screen shown in Figure 1 will display. Use the Welcome screen to register the Solutions software, configure program settings, and validate the software.

Figure 1:   Welcome Screen
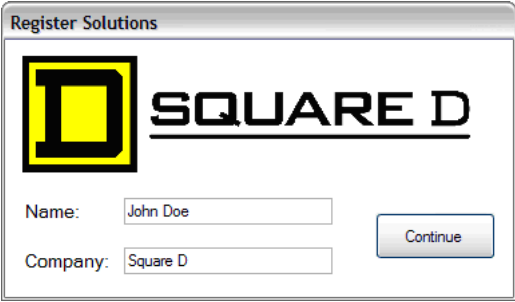
Registration

Registration is required to activate the software.

To register the Solutions software, enter the user and company name, and click Continue. Refer to Figure 2.

Figure 2:   Registration Screen

Configure Default Application Settings

Once registration has been completed, the Options window will appear. The Options window permits the configuration of many program settings, including all default network settings. Figure 3 shows the Options window. Each setting option is described in Table 1 on page 16.

Default communications settings are applied to all new networks. However, communications settings for individual networks may be changed at any time using the Network window. Refer to Network Window on page 20.

Figure 3:   Options Window

Options	
Default Communications Settings	
Number of Retries	1
Default RTU Communications Settings	
Available Ports	Com1
Baud Rate	19200
Data Bits	8
Parity	Even
Stop Bits	One
Timeout Delay	500
Default TCP Communications Settings	
IP Address	192.168.1.11
Port	502
Timeout Delay	500
General Settings	
Auto Download Enabled	True
Auto Update Outputs	True
Auto Upload Enabled	True
Fault Priority	3
Network Locked	False
Model File Settings	
Model File	C:\model.mdl

Model File
The location of the model file

Table 1:   Communications, General, and Model File Descriptions

Default Communications Settings	
Number of Retries	The number of attempted retries before a timeout.
Default RTU Communications Settings	
Available Ports	The port used for Modbus RTU communication.
Baud Rate	The default baud rate to use for Modbus RTU networks.
Data Bits	The default number of data bits per byte.
Parity	The default parity checking scheme.
Stop Bits	The default number of stop bits for each received byte.
Timeout Delay	The amount of time (seconds) to wait for a message before a timeout error.
Default TCP Communications Settings	
IP Address	The IP address of the Ethernet gateway.
Port	The port used for TCP/IP communications.
Timeout Delay	The amount of time (seconds) to wait for a message before a timeout error.
General Settings	
Auto Download Enabled	When enabled, automatically retrieve settable parameter values from the device.
Auto Update Outputs	When enabled, outputs are updated the moment they are changed.
Auto Upload Enabled	When enabled, automatically send settable parameter values to the device when the value changes.
Fault Priority	The number of units that are scanned for pending and latched faults (Overcurrent, undercurrent, high voltage, and low voltage) during each refresh of parameters in Modbus networks.
Network Locked	When enabled, settable parameters cannot be changed or downloaded.
Model File Settings	
Model File	The location of the file that contains device information.

After the options have been configured, the Select Network Connection Type dialog box displays. Refer to Figure 4. Selecting Modbus TCP allows connection with an Ethernet Modbus Gateway, such as the PowerLogic® EGX400. An Ethernet Modbus Gateway allows communication with many different Modbus devices over one IP address.

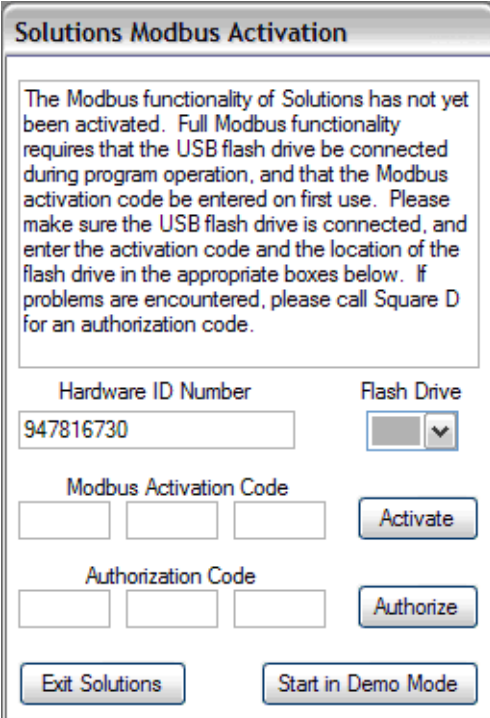### Figure 4:   Select Network Connection Type Dialog Box
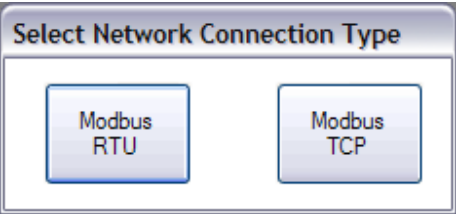
Activating the Software and Creating a Network

Modbus® Activation

The first time a Modbus network is created, the Solutions software must be activated to achieve full Modbus functionality. Refer to Figure 5.

Figure 5:   Solutions Modbus Activation Dialog Box

To activate Modbus functionality, perform the following steps:

1. Select a drive letter for the flash drive.

   NOTE: The USB flash drive that contains the installation files must be connected at all times during program operation. Removal of the USB flash drive will cause the Solutions software to revert to demo mode.

2. Enter the Modbus activation code that shipped with the product in the Modbus Activation Code fields. Pay special attention to the case of the letters in the serial number.

3. Click the Activate button. If the correct activation code is entered, the Solutions software will start.

    If the Modbus functionality has been previously activated and the activation screen appears during the addition of a new network, ensure that the USB flash drive is inserted.

4. If the Modbus activation does not work, the authorization code must be entered.

    If the Modbus activation does not work after the authorization code is entered, contact Schneider Electric's Product Support Group (PSG) Toll Free: 1-888-SquareD (888-778-2733) in the USA. The PSG will need the following information:

    — First name

    — Last name

    — Company name and address

    — Phone number

    — Hardware ID number as shown in the Validation window

    — Software serial number

    — Reason for request

    The PSG will provide an authorization code for the computer that is associated with the Hardware ID number shown in the Solutions Modbus Activation dialog box. See page 17. Enter the authorization code in the Authorization Code fields, and click the Authorize button.

    NOTE: The authorization code should be used only when the USB flash drive is not present, when the USB flash drive has been damaged, or when other circumstances arise that prevent the validation process from working properly. Repeated authorizations of the same serial number will be evaluated on a case-by-case basis.

Solutions Software Demo Mode

If the Modbus activation process is unsuccessful, you may start the Solutions software in demo mode. Starting the software in demo mode disables many of the program's features, including uploading values to network devices, data logging, and saving network files.

Program Control

Windows Icons

Throughout this section you will see various icons used in the text. These icons are present on the various windows and toolbars as you progress through the screens. Table 2 contains these icons, a brief description of there usage and the window or toolbar the icons appear on.

Table 2:   Windows Icons

Icon	Used to:	Window or Toolbar
	Enable and disable the auto-hide feature of the window	Various Windows
	Change the way the devices are displayed	Network Window
	Indicate that the selected serial port can be opened	Network Window
	Indicate that the selected serial port can be closed	
	Red down arrow—download all parameters (retrieve)	Device Properties Toolbar
	Green down arrow—download the currently selected parameter (retrieve)	
	Red up arrow—upload all parameters (send)	
	Green up arrow—upload the currently selected parameter (send)	
	Display each selected bit-enumerated parameter setting	Bit-Enumerated Monitor Parameter Display Area
	Manually start the logging process	Logging Settings Window
	Manually stop the logging process	
	Reset all logging settings to the program defaults	
	Open the View Log Files Window	Windows Toolbar
	View a selected logging file in a spreadsheet format	View Log Files Window
	View a selected logging file in a spreadsheet format	

Table 2:   Windows Icons *(continued)*

Icon	Used to:	Window or Toolbar
	Automatically scan for devices in the network	
	Manually add a device to the network	
	Remove a selected device	Main Toolbar
	Synchronize the MMS clock with the computer clock	
	Indicate an occurrence of an interruption on the network	Device Fault Data window

Data Screens

This section provides an overview of the data screens that are accessible for viewing and monitoring devices in a Modbus network. These screens include the network window, device and network properties, the error list, and all logging screens. For information regarding data logging window, refer to page 27, and for information regarding Modbus® data windows, refer to page 35.

Many windows contain a 📌 button. This pushpin button enables and disables the auto-hide feature of the window. If the pushpin is oriented vertically, the auto-hide feature of the window is disabled. If the pushpin is oriented horizontally, the window will automatically be hidden.

Network Window

The Network window displays all of the devices in the network. To select a device that is in the network, click on the icon of that device. The network window can display devices in a tile format (default) or a details (spreadsheet) format. Refer to Figures 6 and 7 on page 21.

To change the way the devices are displayed, click on the 🗗 button on the main toolbar.

Every network that is opened is represented by a tab at the top of the screen which contains the network name (for example: Network (1)). To switch between networks, click on the network tab that contains the network name to be accessed.

Figure 6:   Network Window with Tiled Display
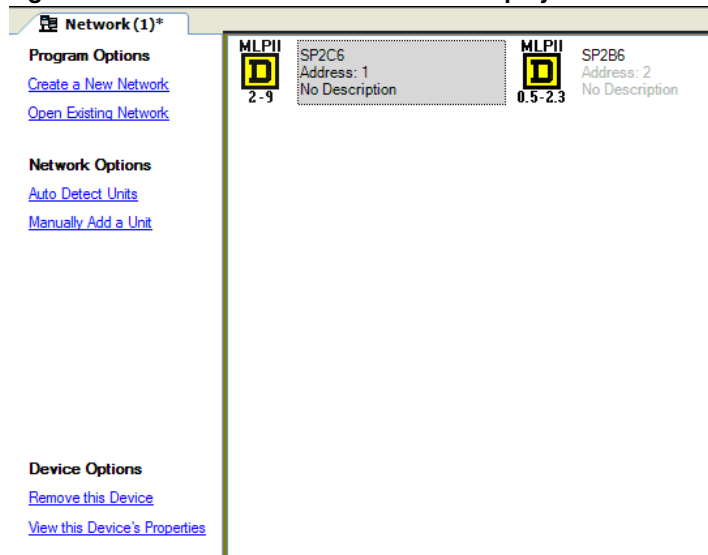
Figure 7:   Network Window with Details (Spreadsheet) Display
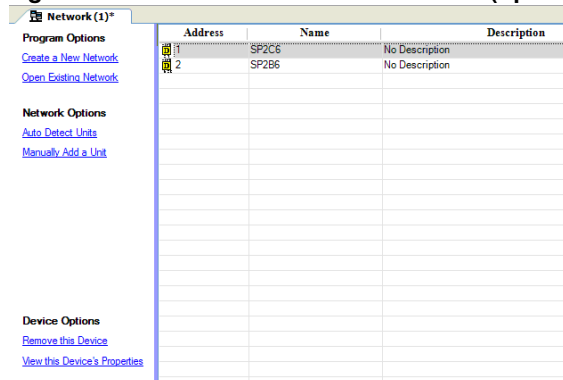
Network Properties

The Network Properties window displays the communication properties for the active network. Refer to Figure 8.

Every network has its own set of communication properties that may be configured at any time. The type of communication properties that are displayed depends upon the network type. For a summary of the communication properties, refer to Table 1 on page 16.

Figure 8 illustrates the communications properties for a Modbus RTU network. The selected serial port can be opened by clicking the ✔ button on the Communication Properties window toolbar. The selected serial port can be closed by clicking the ✖ button on the toolbar.

Figure 8:   Modbus RTU Communication Properties

Comm Port Settings	
Communication Type	Modbus RTU
Number of Retries	1
Serial Port Settings	
Available Ports	COM3
Baud Rate	19200
Data Bits	8
Parity	Even
Stop Bits	1
Timeout Delay	500

Figure 9 illustrates the communication properties for a Modbus TCP network.

Figure 9:   Modbus TCP Communication Properties

Comm Port Settings	
Communication Type	Modbus TCP
Number of Retries	1
TCP Settings	
IP Address	192.168.1.11
Port	502
Timeout Delay	2000

The Network Properties window also contains a status bar and a help window. The status bar, located below the network communication properties, indicates the state of the communications port, while the help window, located below the status bar, provides a description of the selected communication property. Refer to Figures 10 and 11.

Figure 10:   Communication Properties Status Bar

COM3 is opened

Figure 11:   Communication Properties Help Window
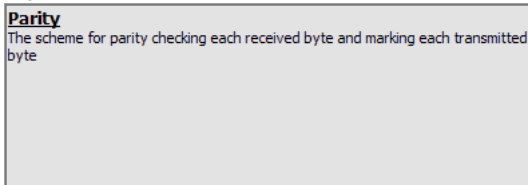
Device Properties

The Device Properties window displays all the parameters for a selected device. The parameters for the selected device can be viewed and configured from this window.

There are three different types of parameters for a Modbus network:

- Monitoring parameters (cannot be modified)
- Settable parameters (can be modified)—Settable parameters include TC and CUB.
- Settable monitoring parameters (can be modified)—Settable monitoring parameters include RD1, RD2, and RD3.

The Device Properties window divides parameters into groups which include a real-time group (contains only monitoring parameters), a setpoint group (contains only settable parameters), and a control group (controls the outputs only).

Monitoring Parameters

Monitoring parameters are updated by the device, and cannot be modified.

Settable Parameters

Settable parameters must be downloaded from and uploaded to the device, and can be modified by the user. The ability to automatically upload and download settable parameters from the device can be configured in the Options menu.

To download (retrieve) settable parameters from a device:

- click on the ⬇ red down arrow to download all parameters.
- click on the ⬇ green down arrow to download the currently selected parameter.

To upload (send) settable parameters to a device:

- click on the ⬆ red up arrow to upload all parameters.
- click on the ⬆ green up arrow to upload the currently selected parameter.

The upload and download buttons are located on the Device Properties Toolbar. Refer to Figure 12.

Figure 12:   Device Properties Toolbar
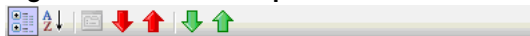
Settable Monitoring Parameters

By default, settable monitoring parameters upload and download automatically when changed. These parameters can be changed in the Options window, therefore, they can be treated in the same manner as settable parameters.

Parameters are displayed in one of three formats:

- Numerical
- Enumerated
- Bit-enumerated

Typically, numerical values are displayed with a defined precision and unit. For example: currents are displayed as x.xx Amps.

Settable parameters are typically enumerated parameters. If a settable parameter contains an enumerated value, a drop-down box will appear showing the parameter's valid enumerations. Refer to Figure 13 on page 25.

Figure 13:   Enumerated Settable Parameter

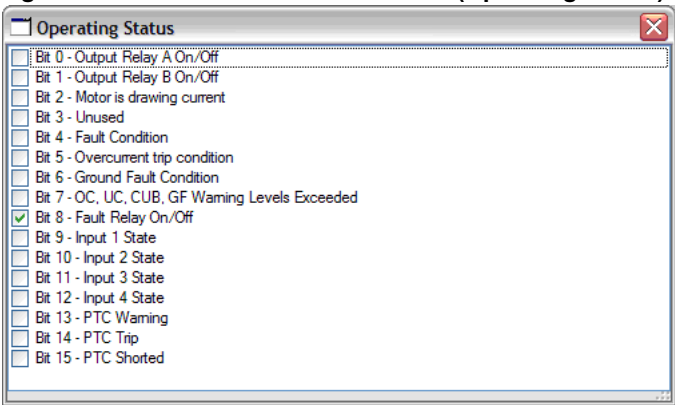| TC	20
CUB	5
RD1	J5
RD2	10
RD3	J10
#RF	15
#RU	J15
MB Address	20
UCTD	J20
GF	30
Comm. Setup	J30

Bit-enumerated parameters are set bit-by-bit and appear in a binary format (For example: 100101010). Refer to Figure 14 which represents the parameter for device property, Operating Status.

Figure 14:   Bit-Enumerated Monitor Parameter

Operating Status	0000000100000000	[...]

Using Figure 14 as an example, if you click on the [...] button for the selected bit-enumerated parameter, each bit's setting will appear in the enumerated bit window (for this example, Operating Status) as shown in Figure 15 on page 25. Any bit can be modified by checking or unchecking the check box to the left of the bit number and description. Each check box that is checked will display a "1" in the Bit-Enumerated Monitor Parameter display area. Each check box that is unchecked will display as a "0" in the Bit-Enumerated Monitor Parameter display area.

Figure 15:   Enumerated Bit Window (Operating Status)

Operating Status

☐ Bit 0 - Output Relay A On/Off
☐ Bit 1 - Output Relay B On/Off
☐ Bit 2 - Motor is drawing current
☐ Bit 3 - Unused
☐ Bit 4 - Fault Condition
☐ Bit 5 - Overcurrent trip condition
☐ Bit 6 - Ground Fault Condition
☐ Bit 7 - OC, UC, CUB, GF Warning Levels Exceeded
☑ Bit 8 - Fault Relay On/Off
☐ Bit 9 - Input 1 State
☐ Bit 10 - Input 2 State
☐ Bit 11 - Input 3 State
☐ Bit 12 - Input 4 State
☐ Bit 13 - PTC Warning
☐ Bit 14 - PTC Trip
☐ Bit 15 - PTC Shorted

Each settable parameter has a valid range of values which is viewable in the Help window. Refer to Figure 16.

Figure 16:   Device Properties Help Window

Error List

The Error List displays when the [icon] icon, on the bottom of the screen, is activated due to an error condition. The Error List appears only if an error has occurred; otherwise, the list is invisible. Refer to Figure 17.

To view the error list, hover the mouse pointer over the Error List tab until the list appears.

To clear the error list, right click anywhere on the list, and click Clear Error List.

Figure 17:   Error List

Node	Count	Time	Date	Parameter	Error Message
1	1	8:44:37 AM	5/4/2007	Average Current	Read Timeout
1	1	8:44:39 AM	5/4/2007	Current Unbalance	Read Timeout
1	1	8:44:40 AM	5/4/2007	Thermal Capacity	Read Timeout

Data Logging

Logging is a function of the Solutions software that is available in Modbus networks. The only values that can be logged are numerical monitoring parameters.

The following logging options are available:

- The time to start logging information
- The time to stop logging information
- The amount of time between readings

For example, data can be logged every 15 minutes from 1:00 AM to 8:00 AM and the log files can be imported into a spreadsheet. This information can be used to plot the average voltage as it varied from 1:00 AM to 8:00 AM.

Also, data logging can be triggered when the value of a monitored parameter threshold is exceeded. For example, if the average current exceeds the setpoint, then the event will be logged. This feature helps determine the time the problem(s) arose.

Logging Settings Window

The Logging Settings window is used to configure all the logging options. To access the Logging Settings window, from the menu bar, select Tools>Logging>Settings. See Table 3 on page 29 for a list of the logging parameters including factory defaults. There are two types of logging that can be performed:

- Manual logging
- Timed logging

Manual Logging

Manual logging (default) requires the user to start and stop the logging function. Refer to Figure 18.

Once parameters are selected for manual logging, the [icon] button will be enabled. Clicking on this button will start the logging process. To stop logging, click on the [icon] button.

Figure 18:   Logging Setting Window with Manual Logging Enabled
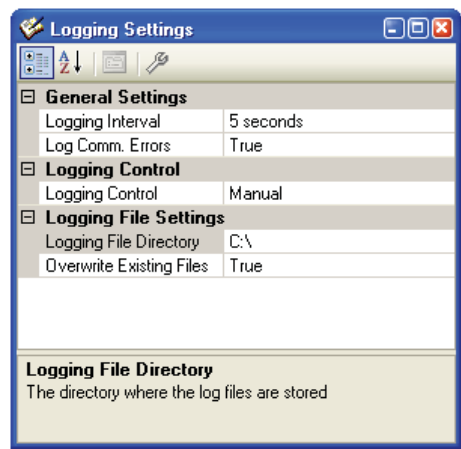
Timed Logging

Timed logging automatically logs data during a user specified interval. The Logging Control parameter may need to be set to Timed. Once set, the Logging Settings screen appears as shown in Figure 19.

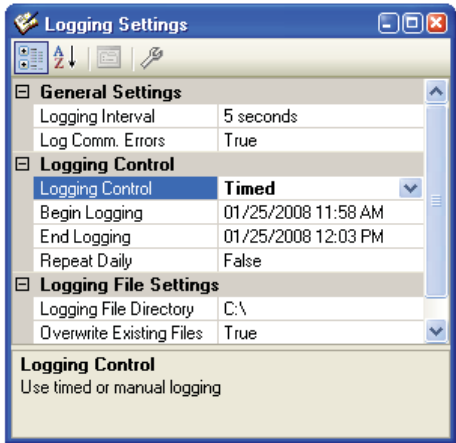**Figure 19:   Logging Setting Window with Timed Logging Enabled**

Table 3:   Logging Parameters for Manual and Timed Logging

Setting Type and Name	Description	Factory Default Setting
General Settings		
Logging Interval	The minimum amount of time required to elapse before data values are logged. **NOTE:** Because some devices have more data to acquire than others, this is a minimum elapsed time and not an exact time.	5 seconds
Log Communication Errors	Log any communication errors when they occur.	True
Logging Control		
Logging Control	Timed logging or manual logging.	Manual
Begin Logging	The date and time logging should begin (timed logging only).	—
End Logging	The date and time logging should end (timed logging only).	—
Repeat Daily	If enabled, timed logging occurs at the same time interval every day.	—
Logging File Settings		
Logging File Directory	The directory where logging files will be stored.	C:\
Overwrite Existing Files	True = existing logging files are erased when logging begins. False = existing logging files are appended with data.	True

NOTE: Clicking the 🔧 button resets all the logging settings to program defaults.

Units to Log Window

The Units to Log window is used to select the parameters to be logged for each device in the network. Refer to Figure 20. To access the Units to Log window, from the menu bar, select Tools>Logging>Units to Log.

Figure 20: Units to Log Window

Select the monitored parameters to include in the log file by checking the box next to the parameter. Parameters can be selected individually, or by clicking the Select All button to choose all the parameters at once. Click the Clear button to deselect all the parameters and start over.

Select the threshold check box next to the log check box if the monitored parameter has a threshold that needs to be monitored. If the Threshold check box is checked, the Operator and the Threshold Value must also be set. The operator is the procedure used which produces a value from an input value which is defined by the threshold value. Referring to Figure 20, the operator is "Greater than or equal to" the threshold value. The Threshold Value column is used to set the state of the parameter at which the threshold of the parameter is exceeded. If the value of a monitored parameter threshold is exceeded during a logging session, the event will be added to the log file.

NOTE: Fault Events, Starts, and Stops listed under the Parameters to Log heading can only be logged in Modbus networks.

View Log Files Window

Solutions software provides the ability to view logging files at any time, including while logging is in progress.

To open the View Log Files window, click on the [icon] button on the toolbar. The View Log Files window provides an Explorer type interface which is used to select the logging file to view. Refer to Figure 21.

After the logging file has been selected, you can view it in a spreadsheet format by clicking the [icon] button, or in a text format by clicking the [icon] button. Logging files are automatically refreshed every 15 seconds.

Figure 21:   View Log Files Window
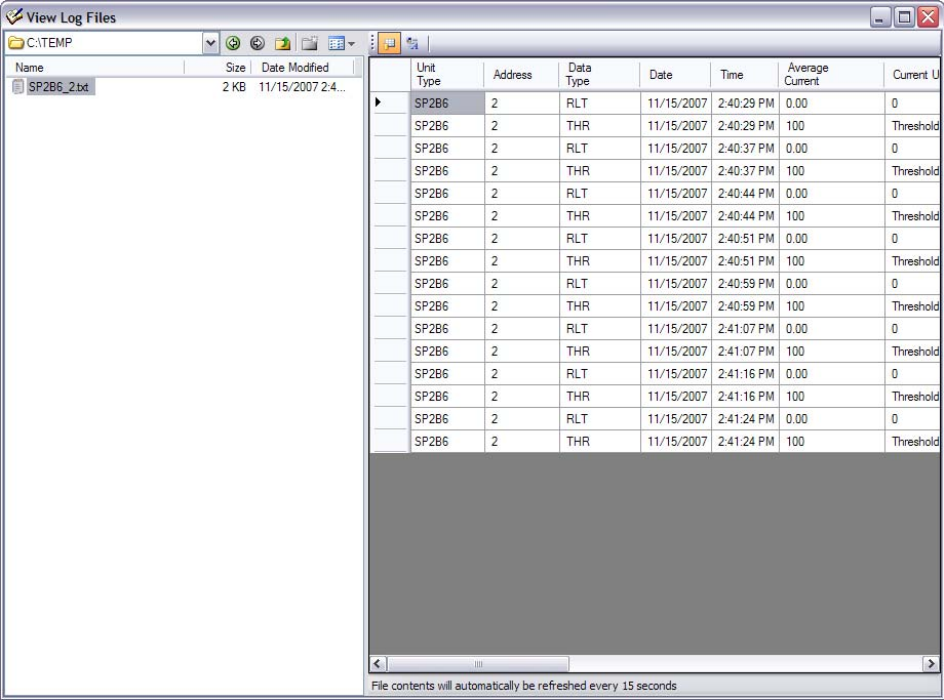
Creating a Network

Modbus® Network

Devices can be manually added or automatically scanned to create a Modbus network in the Solutions software.

To automatically scan for devices in the network, click on the 📡 icon located on the main toolbar or right-click the device icon on the network window. Then specify the starting address of the scan and how many units to scan.

NOTE: Automatic scanning is the recommended method for adding devices to a network.

To manually add a device to the network, click on the ➕ icon located on the main toolbar or right-click on the device icon on the network window.

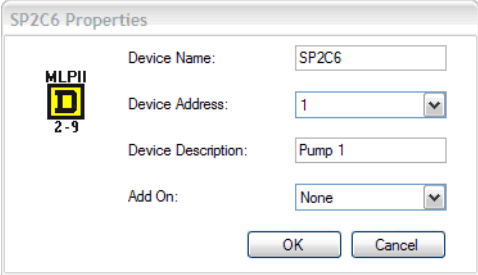**Figure 22:   Manually Adding a Modbus Device**
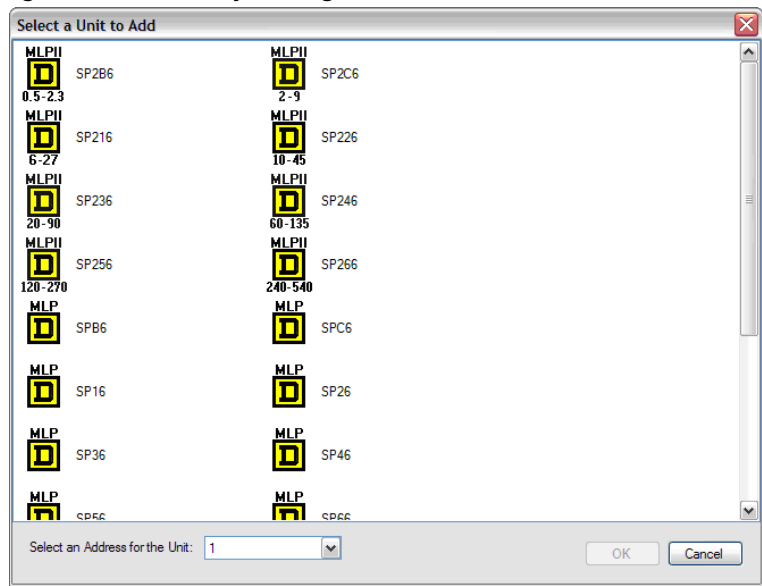
Selected Modbus® Device Options

After a device has been added to the network, it can be selected by clicking on the device icon. Selecting a device provides the ability to:

- View and, if applicable, configure the selected device's setpoints and real-time parameters

- View the selected device's properties, change the description and address, and configure add-ons for the device. To view properties for the selected device, right click on the device, and click Properties. Refer to Figure 23.

- Remove the selected device. To remove the selected device, click on the ▬ button on the toolbar.

- If the selected device has an MMS with a revision of 3.15 or higher, Solutions software provides the ability to synchronize the MMS clock with the computer clock. To perform this function, click on the 🖳 button on the toolbar.

Figure 23:   Selected Device Properties

Modbus® Data Windows

This section provides an overview of the windows available for monitoring and configuring devices on a Modbus network. These windows include the Event History, Fault History, Device Fault Data, Pending Faults, and Setlock Lock windows. These windows appear as tabs at the bottom of the screen. When you mouse over the tab, the corresponding pop up screen displays.

Event History Window

The Event History window displays detailed information about recorded events including communication loss and/or restoration, motor starts and stops, and power loss and/or restoration.

The Event History window is only viewable when an MMS or MMS-R is connected to the MLP or MLPII overload relay. If MMS and MMS-R display modules are selected as an option on the network, a tabbed window at the bottom of the event window will appear. Refer to Figure 24.

Figure 24:   Event History Window

Event History				
	Event #	Event	Time	Date
▶	Oldest Event	Motor Start	11:32 AM	5/4/2007
	Event 1	Motor Stop	11:32 AM	5/4/2007
	Event 2	Motor Start	11:33 AM	5/4/2007
	Newest Event	Motor Stop	11:41 AM	5/4/2007

Fault History Window

The Fault History window contains data about any stored fault conditions relating to the currently selected overload relay and, if applicable, MMS faults. Refer to Figure 25.

Stored MMS detected faults may contain additional data which is viewable by clicking on a MMS detected event listed in the fault column. Refer to Figure 26 on page 36.

Figure 25:   Fault History Window

Fault History				
DeviceType	Fault Order	Fault	Time	Date
▶ SPC6	Last Fault	Ground Fault	NA	NA
SPC6	Fault 2	Ground Fault	NA	NA
SPC6	Fault 3	Low Kilowatt Trip	NA	NA
SPC6	Fault 4	Single Phased Current	NA	NA
MMS	Newest Fault	Ground Fault	11:41 AM	5/4/2007

Figure 26:   Fault History Window with Additional Fault Data

Device Type	Fault Order	Fault	Time	Date		Parameter Name	Value	Units
SPC6	Last Fault	Ground Fault	NA	NA	▶	A-C Voltage	364	Volts
SPC6	Fault 2	Ground Fault	NA	NA		B-C Voltage	364	Volts
SPC6	Fault 3	Low Kilowatt Trip	NA	NA		A-B Voltage	364	Volts
SPC6	Fault 4	Single Phased Current	NA	NA		Average Voltage	364	Volts
▶ MMS	Newest Fault	Ground Fault	11:41 AM	5/4/2007		C Current	24.5	Amps
						B Current	23.7	Amps
						A Current	24.4	Amps

Device Fault Data Window

> The Device Fault Data window contains information relating to the last fault, and can be cleared at any time by right clicking on the Device Fault Data window, and clicking Clear All Faults.

> If an interruption has occurred on the network, the ⚠ icon will appear on the status bar.

Figure 27:   Device Fault Data Window

	Node	Fault	Time	Date	Fault #
▶	1	Ground Fault	11:41:13 AM	5/4/2007	1

Pending Faults Window

> The Pending Faults window appears as a warning if there is a condition occurring which has not caused the unit to trip.

> This window operates in the same manner as the Device Fault Data window; however, this window will only display pending fault data. Refer to Figure 28.

Figure 28:   Pending Faults Window

|	Address	Unit Type	Pending Fault
▶	1	SPC6	Low Voltage Condition

Setpoint Lock Window

The Setpoint Lock window controls the setpoint lock feature of the MLP SSOLR (Solid State Overload Relay). It also displays the controls that permit new passwords and masks to be edited and/or downloaded. Refer to Figure 29.

NOTE: All of the MLP setpoints can be locked or unlocked.

To lock individual setpoints, select the checkbox next to each setting Name.

To view the description for an individual setpoint, click on the setting Name.

Figure 29:   Setpoint Lock Window
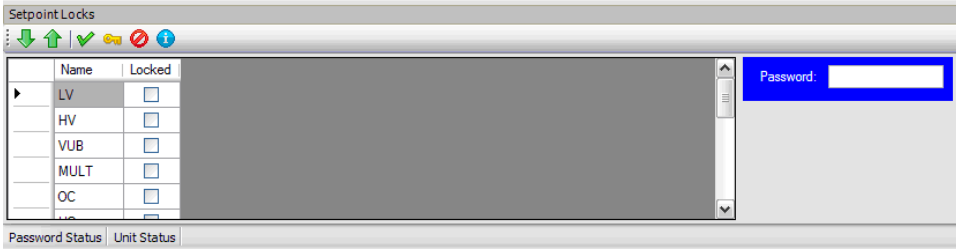
Uninstalling the Software

If the Solutions software must be uninstalled, use the Add or Remove Programs option in the Control Panel.

Solutions Software, Class 9999 Type MLPS Series E
Instruction Bulletin