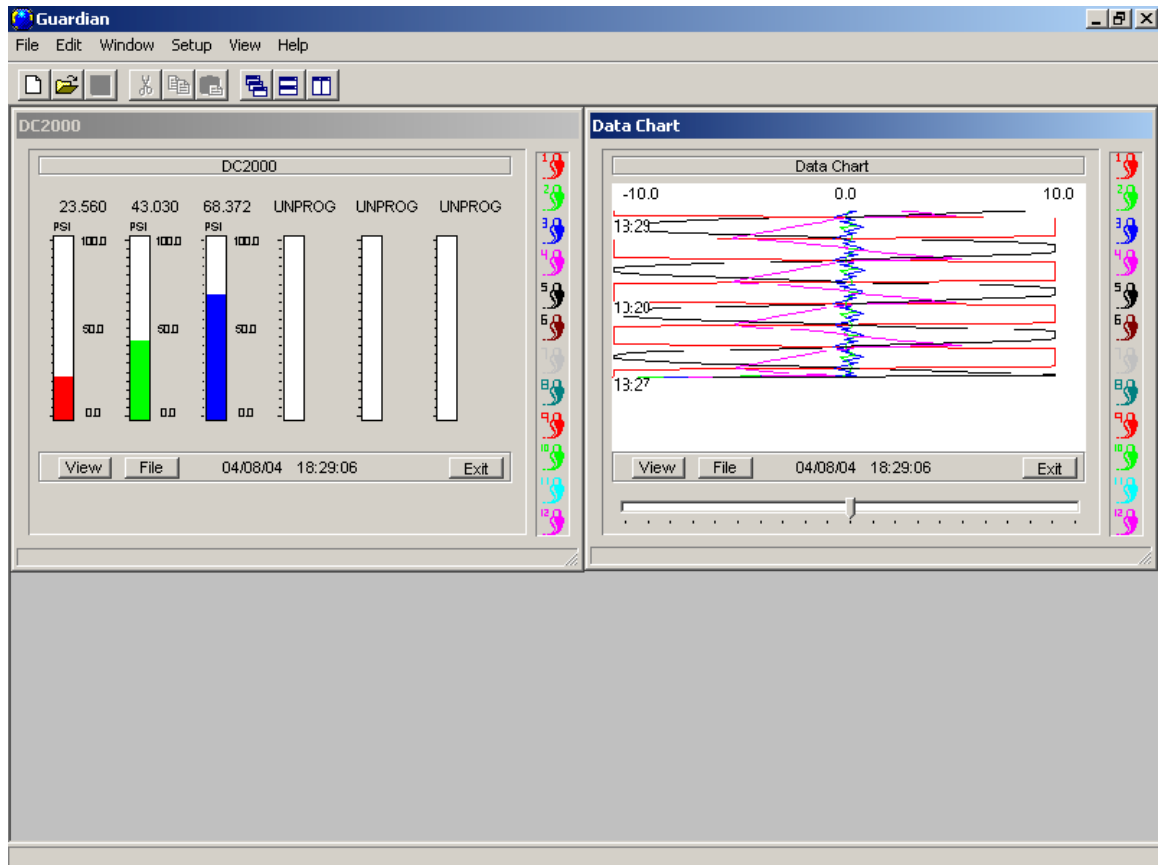




MONARCH INSTRUMENT

Instruction Manual



Data-Chart® 2000 Guardian Software

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1 Guardian Software

1.1 Overview

Guardian Software is a real-time data monitoring and collection program, which utilizes the Modbus over Ethernet protocol to obtain connectivity.

2 Installation

2.1 Microsoft Windows™ Installation

To install the Guardian package:

Exit from any open applications. Place the supplied Compact Disk (CD) into your CD drive. Choose Start, Run and browse the CD for setup.exe. Follow the prompts. Once you are satisfied with your selections, click the “Install” button. Click “Finish” to complete the installation.

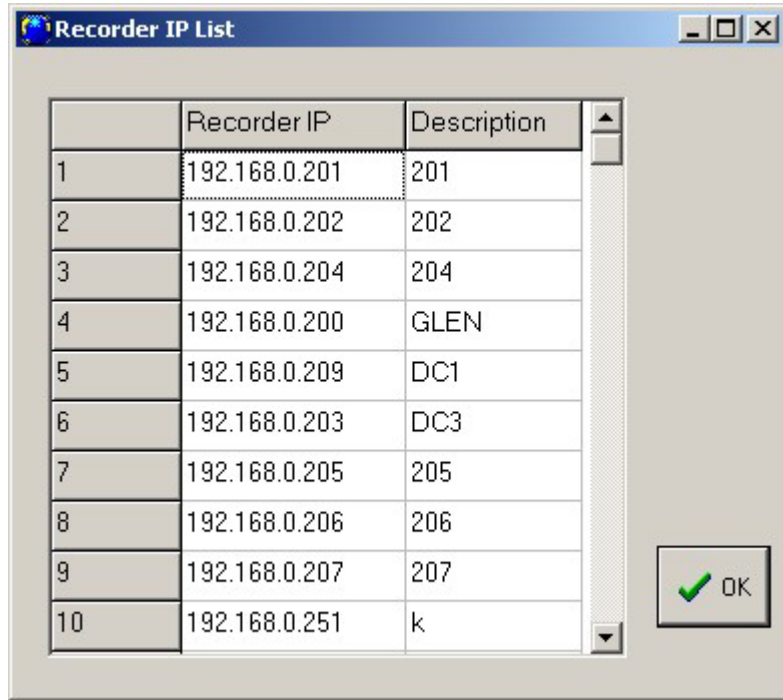
3 Getting Connected

3.1 Setting up your Recorder

Please refer to your Recorder manual for the proper method of setting up the unit's IP Address and Subnet Mask.

3.2 Configuring the Guardian IP Address Book

To add Recorders to the IP Address Book, select “*Recorder List*” from the Setup pull-down menu. The Recorder IP List window will appear (see below).

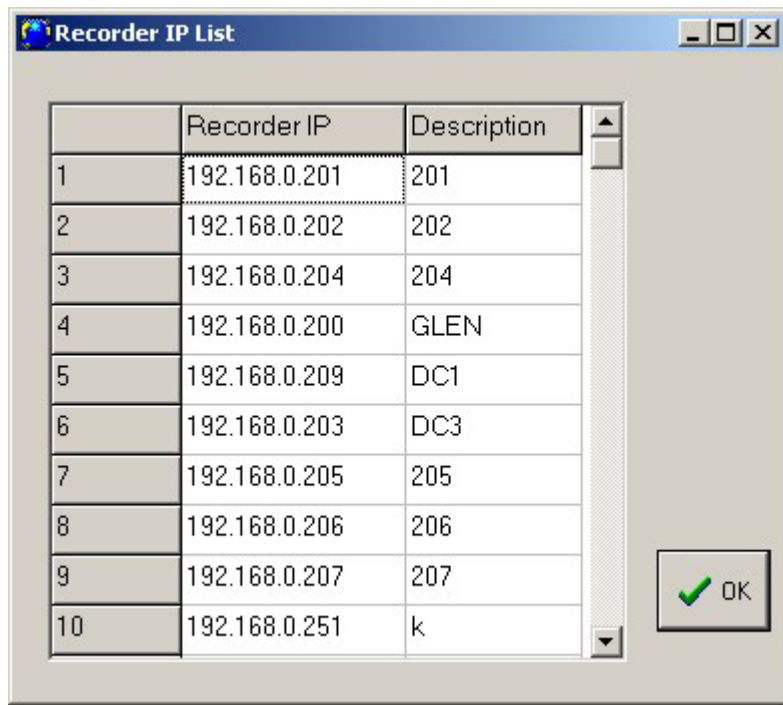


Enter the appropriate IP address for each Recorder along with a brief description to identify them. Once you have finished adding Recorders to the Address Book, press the OK button.

4 Using Guardian Software

4.1 Logging On to a Recorder

To log on to a Recorder, select “*Recorder List*” from the View pull-down menu. The Recorder IP List window will appear (see below).



Double click on the desired Recorder IP Address and Guardian will attempt to connect to that device using the TCP/IP protocol. Once connected, Guardian will create a “Virtual Recorder” window for that Recorder. You can continue to double click on additional IP Addresses to connect to as many Recorders as there are in the Address Book.

4.2 The Virtual Recorder Overview

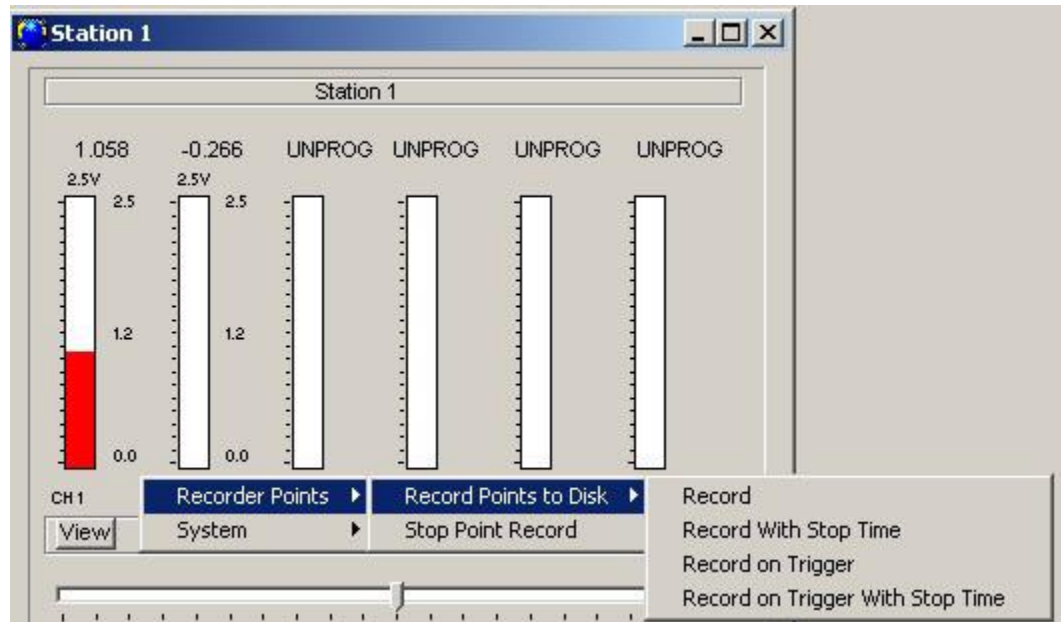
When Guardian connects to a Recorder, an exchange of information occurs that provides the software with the necessary information to simulate the Recorder’s display. Guardian will query the Recorder on a real-time basis collecting current point and status information and display it either in the bar chart format or the pen trending format. Guardian will update the non real-time information (point tag, etc.) approximately every 30 seconds.

While viewing real-time data, Guardian offers the ability to record data with various options, view directories, and transfer files.

4.3 Recording Data with Guardian

Guardian allows data recording from the Recorder in a couple of different ways.

To begin, press the *right* mouse button to display the shortcut menus. Select “*Recorder Points*” then “*Record Points To Disk*”.



Next select “*Record*”, “*Record With Stop Time*”, “*Record on Trigger*” or “*Record on Trigger With Stop Time*”.

The “*Record*” option is a manual “Record On” and requires a manual “Record Off”.

The “*Record With Stop Time*” option allows a time and date to automatically terminate the record process.

The “*Record on Trigger*” option is another manual “Record On” type of function that only records when the proper trigger on the Recorder is active. A manual “Record Off” is necessary to terminate the record.

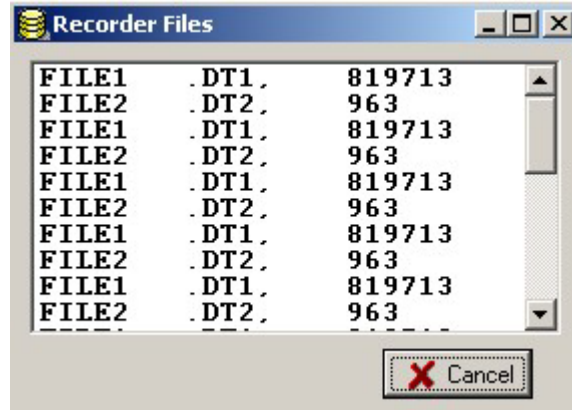
The “*Record on Trigger With Stop Time*” option is the same as the “Record on Trigger” option but with automatic termination of the record.

To terminate a manual record, press the *right* mouse button and select “*Recorder Points*” then “*Stop Point Record*”.

4.4 Transferring Files

Guardian has the ability to transfer any type of file contained on the permanent storage device of the Recorder.

To begin, press the “File” button within the Virtual Recorder window. Guardian will query the Recorder and display all available Files (see example below).



To start the transfer, double click on the file that you wish to copy. Guardian will display the copy status window (shown below) and place the file in the Guardian \ Data folder.



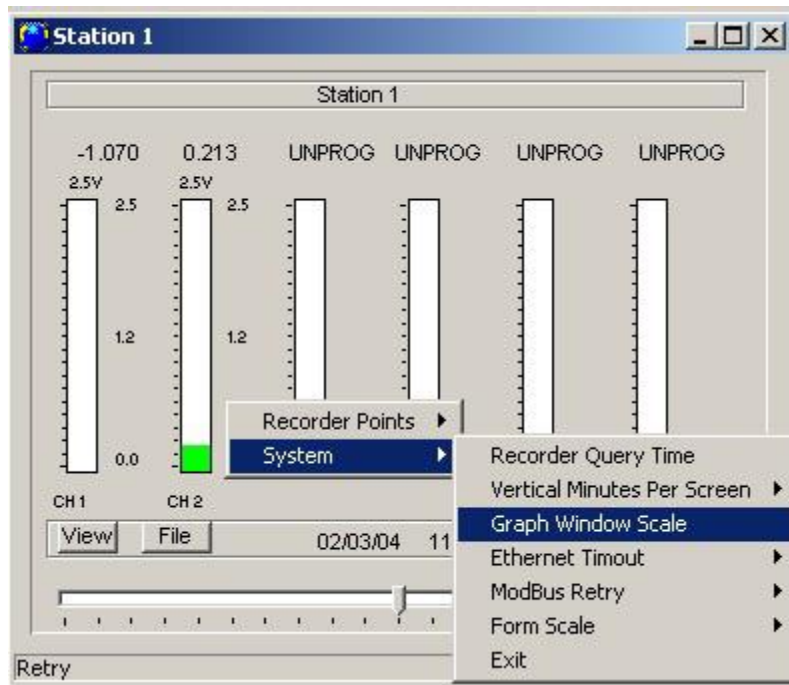
When the process is complete, Guardian will return to normal monitoring.

4.5 Changing the Pen Trending View Display

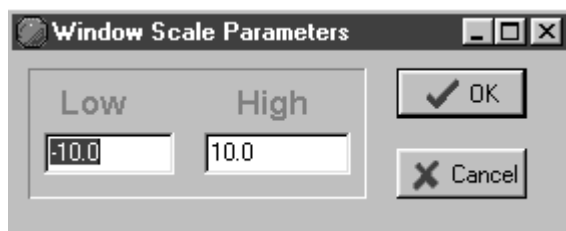
Guardian allows the tracing view to be altered for “Limits”, “Center Origin” and “Time”.

Changing the “Time” allows either 1, 1.5 or 3 minutes of trend data to be displayed on the screen at any given time.

To change the Graph Scale, press the *right* mouse button and select “System” then “Graph Window Scale” from the shortcut menus.



Guardian will display the Window Scale Parameters dialog box (shown below) where Low is the left most Unit and High is the right most unit to frame the window.

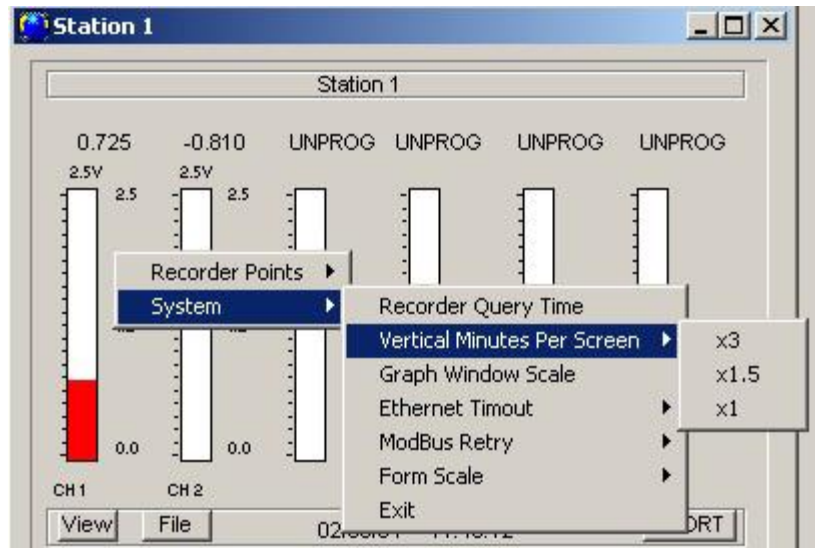


Enter the Low and High scale values and then click on the OK button.

4.6 Changing the Minutes per Screen Display

Guardian allows 1, 1.5 and 3 minutes of trending data to be displayed before scrolling.

To alter the view scale, press the *right* mouse button and select “System” then “Vertical Minutes Per Screen” from the shortcut menus.

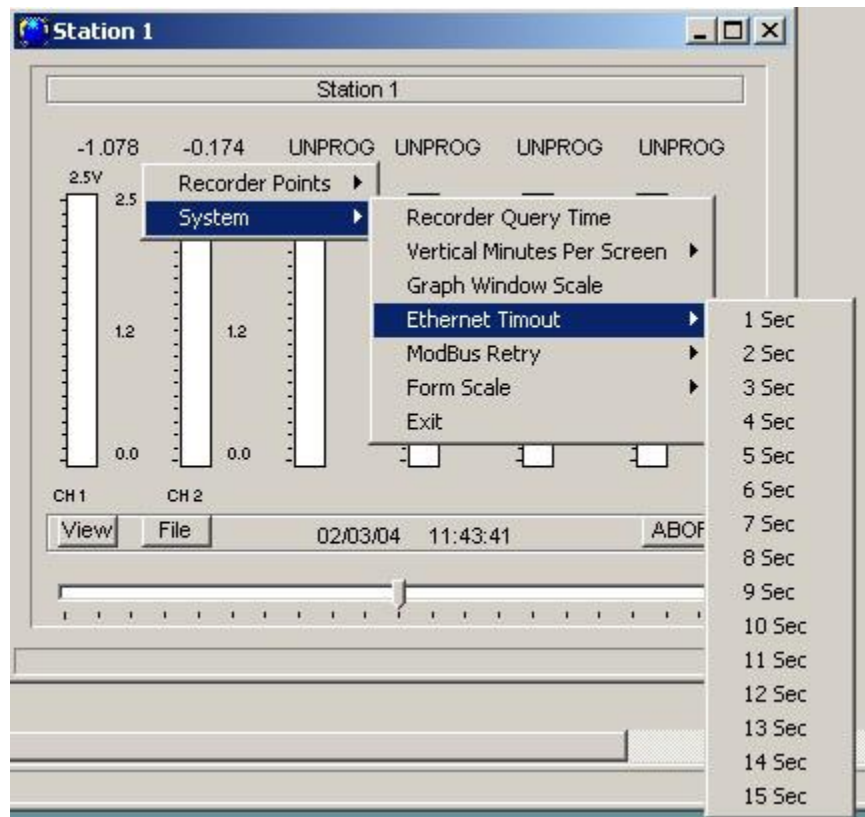


Then select either x3, x1.5 or x1 to change the trending view.

4.7 Optimizing the Modbus Connection

Guardian utilizes the standard ModBus over Ethernet TCP/IP protocol, but due to the nature of company networks, no two places will perform the same. With high data traffic the Recorder may not respond in time for Guardian to know it is still On-Line. The standard timeout is set for 5 seconds with 3 retries.

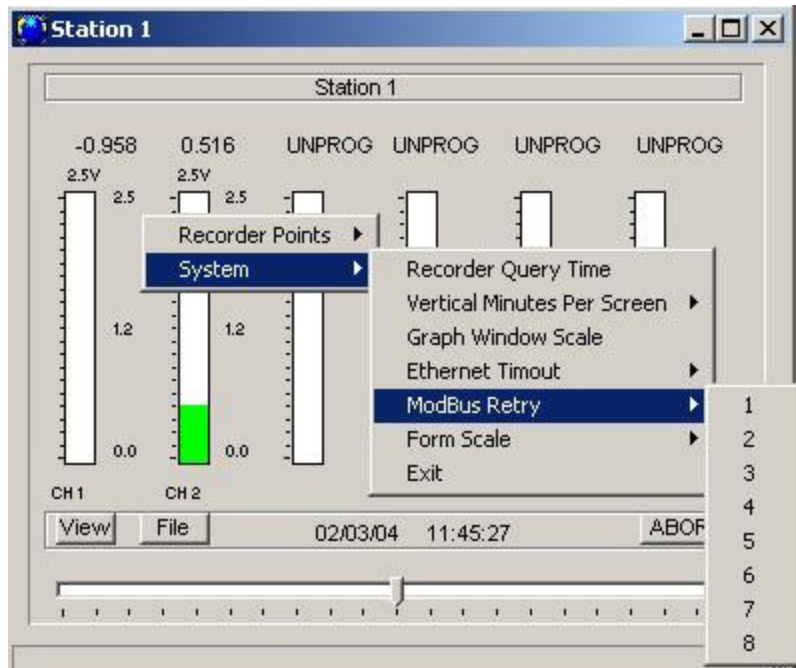
To change the timeout value, press the *right* mouse button and select “System” then “Ethernet Timeout” from the shortcut menus.



Select from 1 to 15 seconds. The time selected will remain constant for the rest of the session.

For most cases, only the transfer of files requires time changes to satisfy large blocks of data transmission. Normal data monitoring works fine with the standard time.

To change the amount of retries Guardian will use when encountering a misread or a no response, press the *right* mouse button and select “System” then “Modbus Retry”.

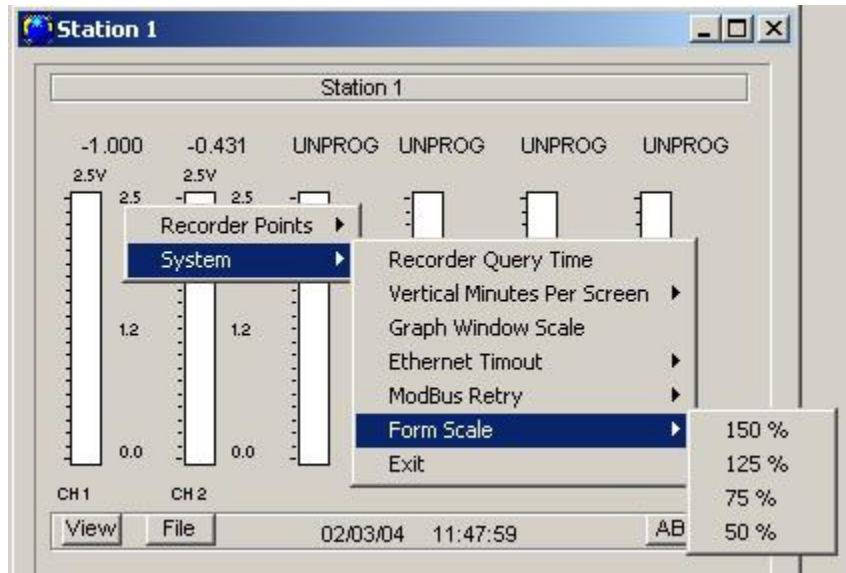


Select from 1 to 8 retries. The number of retries selected will remain constant for the rest of the session.

4.8 Changing the Virtual Recorder Screen Size

With numerous virtual Recorders possible on the computer screen, it may become necessary to shrink the screens so the full display of multiple charts can be seen at the same time.

To alter the screen size, press the *right* mouse button and select “System” then “Form Scale” from the shortcut menus.



To reduce the Form Scale by half, select 50%. To reduce it by 25%, select 75% because the numbers shown reflect the percent of full scale to be applied to the operation