PXR-LITE System

FUJI ELECTRIC PXR

Control and Monitoring Software

Rev 1.0

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DiJiTized Communications Inc.
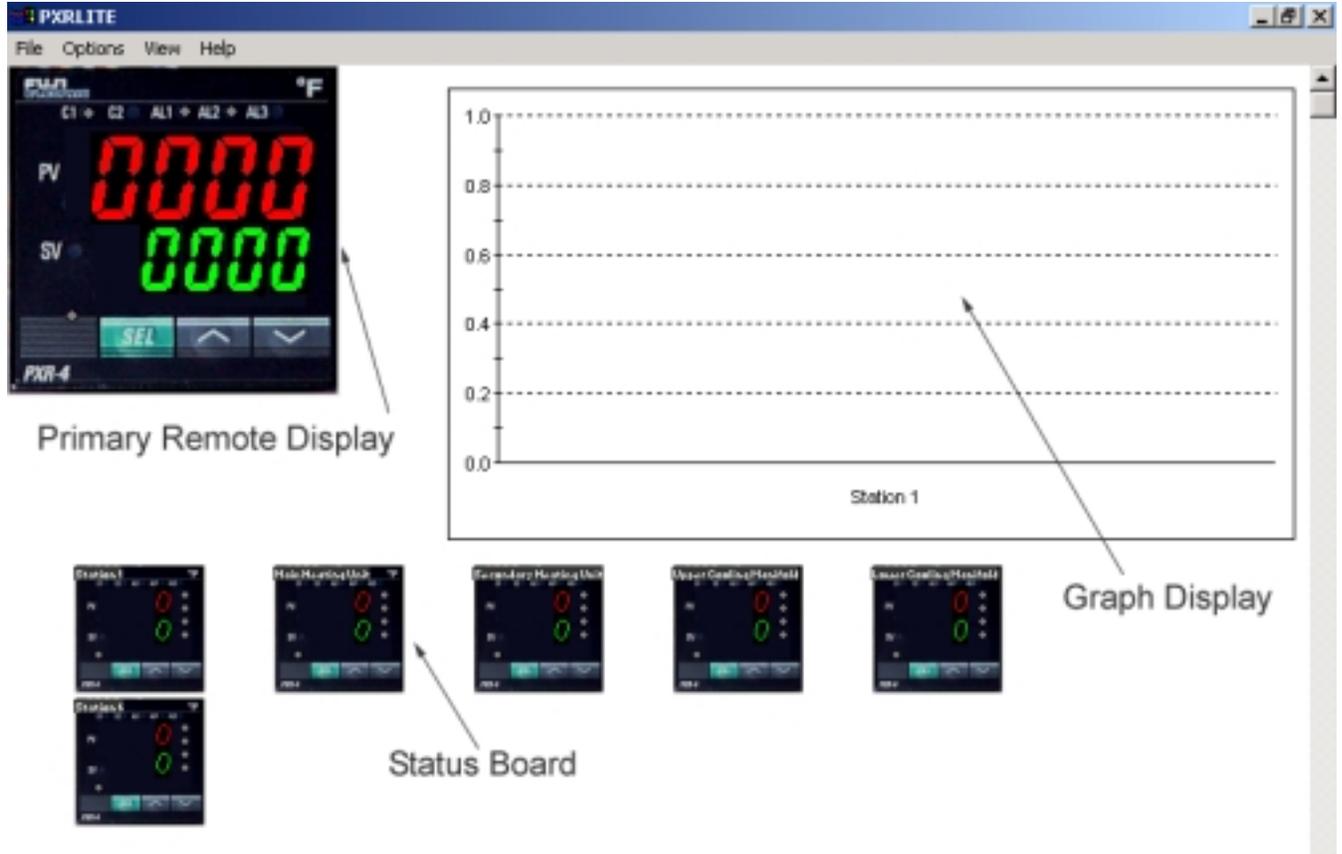
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General Information

Welcome to **PXR-LITE Version 1.0**, the latest in control and monitoring of FUJI ELECTRIC PXR controllers. PXR-LITE provides remote monitoring of single or multiple PXR controllers using a single half-duplex RS-485 line. The PXR-LITE Software provides a convenient method of display and control of multiple controllers. It works on the following environment:

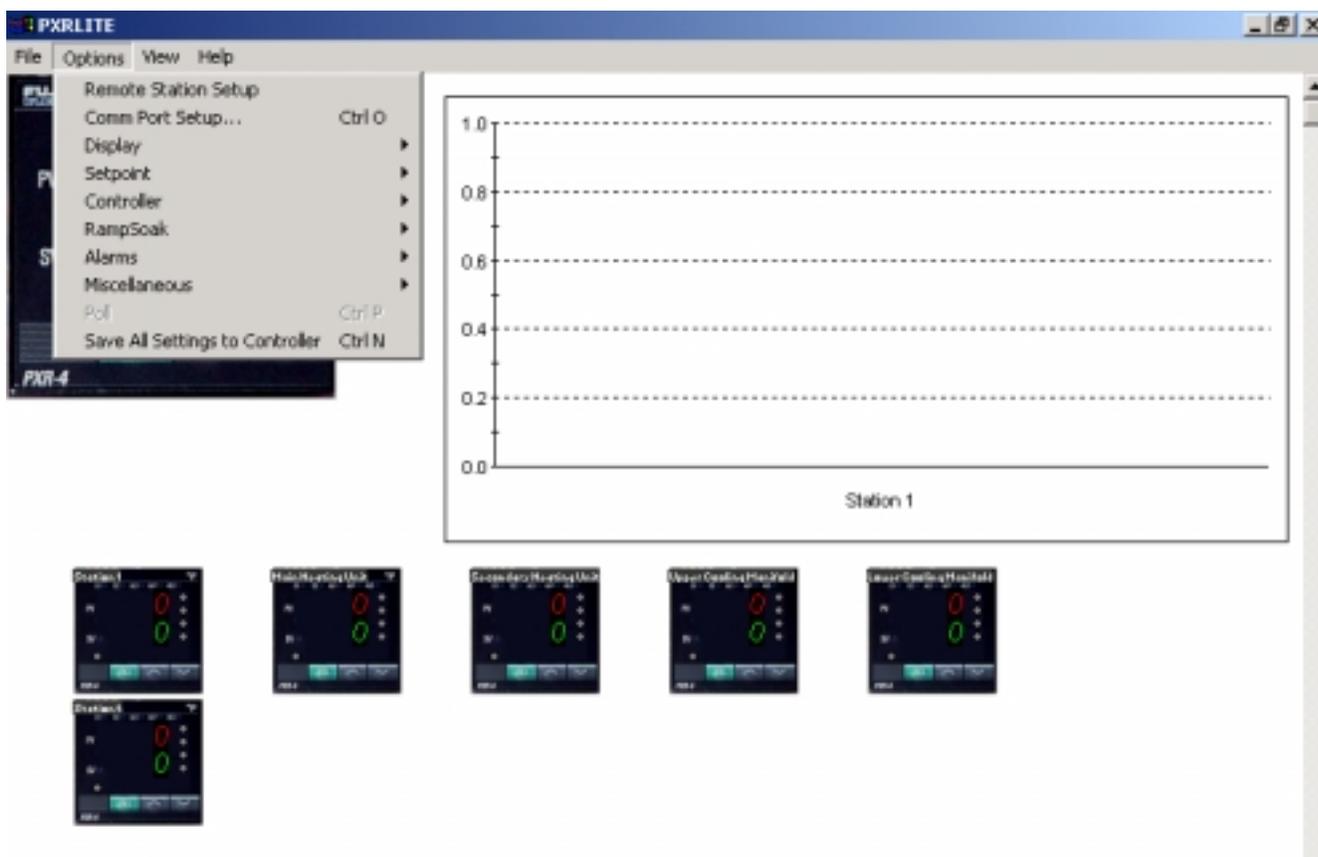Windows 3.1 or later, Windows 95/98, Windows NT 3.51 or later.

Screen Layout

The PXR-LITE Version 1.0 screen is divided into three primary areas. The first area contains the **Primary Remote Display** that closely resembles the appearance of the FUJI PXR4 controller. The second area is the graph which, when polling, will plot the points equivalent to the process variable reading on the PXR. The third area contains the Status Board, just below the Primary Remote Display. The Status Board consists of PXR icons based on the number of remote stations configured within the PXR-LITE Software, up to a maximum of 31, as illustrated below.
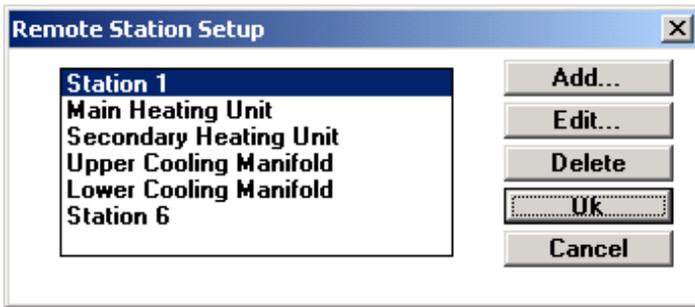
How to Operate PXR-LITE

The PXR-LITE Software is controlled via standard Microsoft Windows menus, and from the FUJI PXR panel display.

The following sections describe each of the menu options listed in the above illustration.

Remote Station Setup

PXR-LITE Version 1.0 will poll multiple PXR controllers. Each controller must have a unique station number in order to communicate properly. To set the station number, consult the instructions in the FUJI Electric PXR Operation Manual. The Status Board is the window area below the Primary Remote Display. Remote stations are polled in the order displayed on the Status Board from left to right. The Selected Remote is the station to which all menu positions will apply. The Selected Remote also becomes the window title for PXR-LITE. A different remote station may be selected by clicking on the panel display for the desired station.

To add stations to the Status Board:

1. Select "Add" in the Remote Station Setup dialog box. The Station Information dialog box will appear.

2. Enter the Station number for the appropriate controller and the desired title. Select "OK". The list box in the Remote Station Setup dialog box will display the new entry.

3. To modify a Station title or Station number, highlight the Station to be modified in the Remote Station Setup dialog box. Select "Edit" in the Remote Station Setup dialog box. The Station Information dialog will appear.

4. Enter the new Station number for the appropriate controller or the new title. Select "OK". The list box in the Remote Station Setup dialog will display the changes.

5. To delete a Station from the Status Board, highlight the Station to be deleted in the Remote Station Setup list box. Select "Delete" in the Remote Station Setup dialog box. The list box in the Remote Station Setup dialog box will display the changes.

6. When all changes are complete, select "OK" from the Remote Station Setup dialog box. The "Remote Station Setup" dialog box will close and the Status Board will display the appropriate changes.

Comm Port Setup

To establish Communications with the PXR controller:

1.   Connect all interconnecting cables and turn on the controller.

2.   Select the Comm Port that has the controller connected.

3.   Select the appropriate BAUD Rate, Parity, and the desired Poll Interval.

4.   Choose whether or not to log, and select a file name for the log. Select "OK."

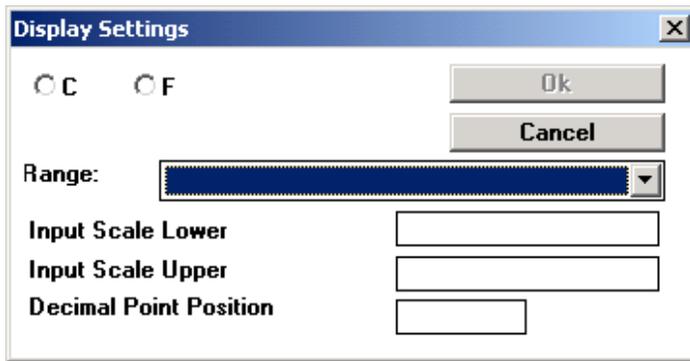The controller will update after a short interval (approximately 2 seconds).

Polling

The **PXR-LITE** module can poll PXR Controllers and display the information on the module display window. The poll interval is normally set during initial Comm port setup. It is recommended that polling be deactivated while making adjustments or while selecting any of the menu options that require communication with the controller. The Poll Selection on the Options Menu will display a checkmark when polling is active.

To Enable Polling, select "Options." The Poll Option should be unchecked. To Disable Polling, Select "Options." The Poll Option should be checked. Now select the "Poll" option.

To change the Poll interval, disable polling if active. Select the "Comm Port Setup" option. Enter the desired Poll Interval. Select "OK."

Display Settings

See the illustration above. The Display Settings Option permits changing the Display Information on both the PXR Controller and the **PXR-LITE** module display window. The units may be changed to Degrees Celsius or Degrees Fahrenheit with or without decimal point scaling.

To change the display units, select the "C" or "F" option. Select "OK."

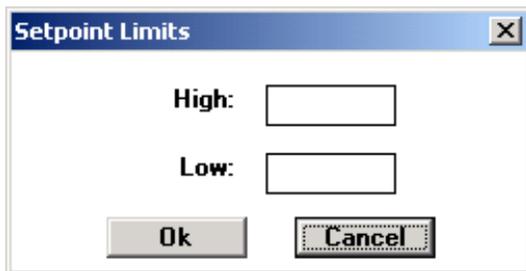To change scaling for extra precision, select the Decimal Point Checkbox. Select "OK."

To change the input range for the PXR controller, select the appropriate input type/range from the Range drop down list box. Highlight the appropriate Range/Input type. When all selections are complete, select "OK." The Input Range/Type should not be modified while the system is on line.

Set Point Adjust

The Set Point Adjust Option allows changing the PXR Controller Set Point. To change the Controller Set Point, enter the desired Set Point. Select "OK."

Set Point Limits

The Set Point Limit Option limits the range of Set Point adjustment. To adjust the Set Point Limits, enter the desired High and Low values. Select "OK."

The manual MV (Manipulated Variable) adjustment allows adjusting the output directly in percent units (0 to 100%).

Controller Settings

The PID Settings Option allows setting the following controller parameters:

Proportional Band – Sets Proportional Band using ratio with respect to input full scale. Range (0-999.9%). Setting of 0.0 provides 2 Point On/Off control.

Integral Time – Sets integral time in seconds. Range (0-3200 seconds).

Derivative Time – Sets the derivative time in 0.1 second units. Range (0-99.9 seconds).

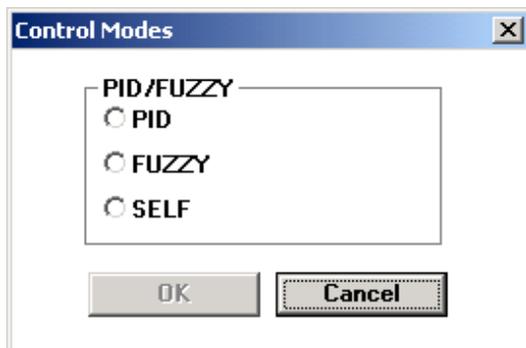Hysterisis – applied during 2-point On/Off control. Range (0-100% of full scale).
Anti-Reset Windup – limits integral range to prevent overshoot during initial operation.

Cooling Proportional Band – Sets cooling side Proportional Band. Range (0.1-10.0).

Dead Band/Overlap – Sets deadband or overlap between heating and cooling sides. Range (-50 - +50%).

To adjust the desired controller parameters, select "OK."

Control Modes

Allows you to select between the PXR's control modes. PID, FUZZY, or SELF. The new SELF mode allows for constant autotuning by the controller, while certain parameters are met:

> At power-on
> When the SV is changed
> When output becomes unstable

When the control standby mode is canceled

Consult your controller manual for a more detailed description. It also lists conditions under which the self-tuning does not run.
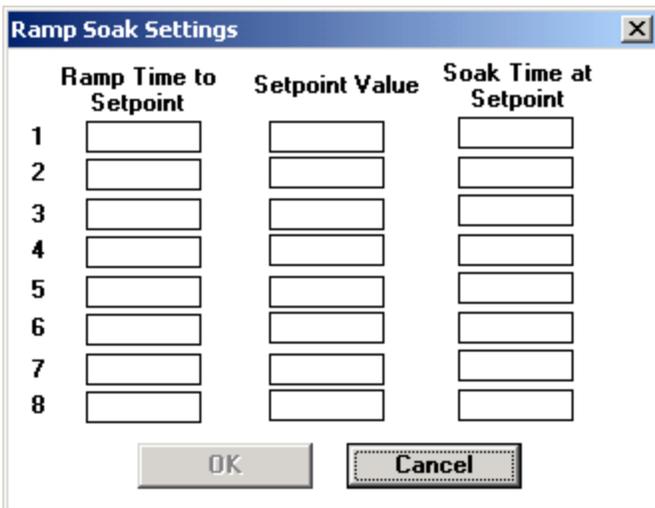
Auto-Tuning

Auto-Tuning allows the controller to set P, I, and D automatically, according to what it thinks their best values should be. Use the Low PV Auto tune to reduce overshoot against the SV.
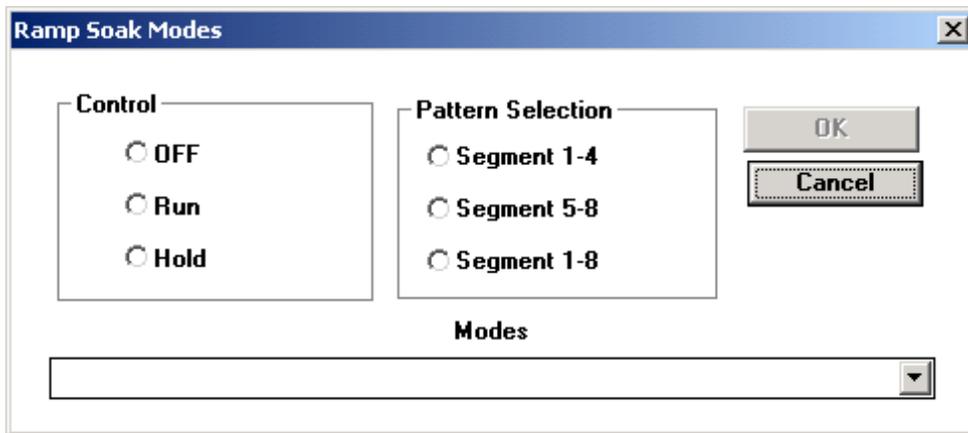
Ramp Soak

Ramp soak allows you to define an SV and how long it will take the PXR to get to that SV, and then how long it will stay there. There are eight ramp-soak segments you can define.
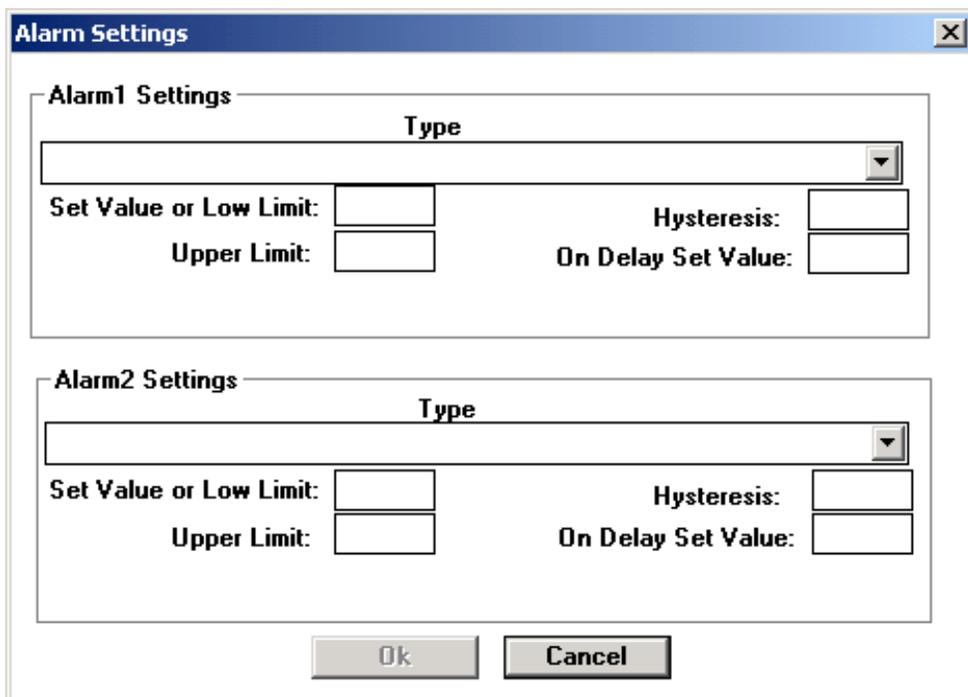
Ramp Soak Modes

The PXR allows you to run three different combinations. Segments 1-4, 5-8, or all 1-8. From this dialog, you can also run, hold, or turn off Ramp Soak.

Alarms

The Alarm 1 and Alarm 2 Options allow setting the PXR Controller multi-alarm options. All alarm settings except the Loop Heater break alarms may be adjusted within this option. The Alarm Style denotes the type of Alarm.

To Set an Alarm Style, select the appropriate style from the drop-down arrow. The current style will be highlighted. Highlight the desired style.
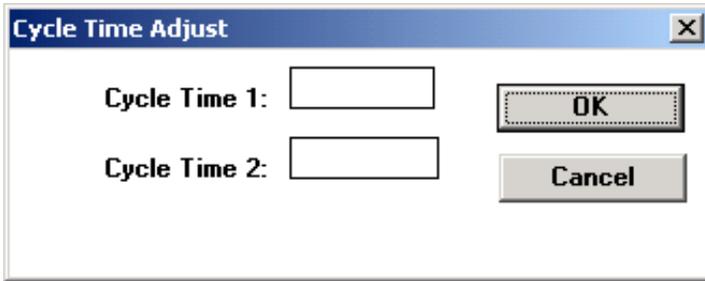
To Adjust the Alarm Settings and Hysteresis, enter the desired values in the input fields adjacent to the Style selection. When all the entries are complete, select "OK."
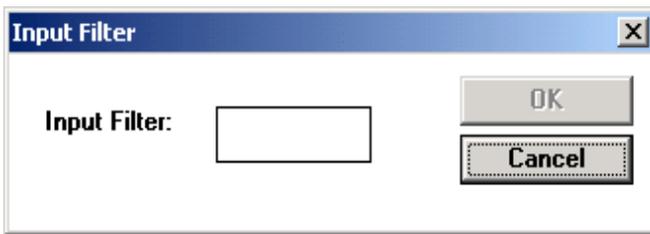
PV Shift

The PV Shift changes the value of the PV up or down by a factor of whatever you define here.
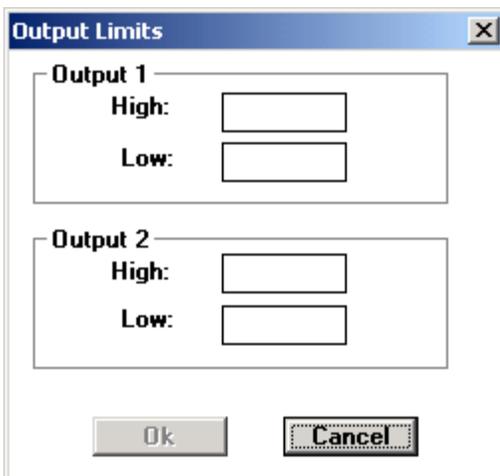
Cycle Time

Allows you to define the cycle time of both outputs.

Input Filter

Allows you to define the input filter.

Output Limits

Sets the limits of the outputs.

Save all settings to controller
Writes to the EPROM of the controller and stores all parameters which will remain when the power is cycled to the controller.

Summary

PXR-LITE provides the operator with a user-friendly interface to remote operation of PXR controllers. PXR-LITE requires minimal training and is designed to be user-friendly. We, at TTI and DiJiTized Communications Inc. appreciate any comments and/or suggestions that you may have towards improving our product.