# PROLON

# Focus Guide

Network Scheduler

Configuration guide for ProLon Focus software

**REV 5.4.0**

www.prolon.net
info@prolon.net

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# 1 NETWORK SCHEDULER

The *Network Scheduler* is a device that allows the scheduling of one or more systems on a single ProLon network.

## 1.1 Scheduler Icon

When a *Network Scheduler* device is added to the network from the *Network View*, a *Network Scheduler* icon is created. You can open the *Scheduler* device's configuration screen by double-clicking its icon or right-clicking it and choosing the "Configure" option. The icon displays an empty field if the *Scheduler* is offline



**Figure 1-1: Typical Scheduler icon**

### 1.1.1 Icon Data

- Real Time: The *Scheduler* icon displays the time provided by the real time clock of *Scheduler* device. The day of the week is abbreviated on the left.

### 1.1.2 Icon Colors

The Scheduler icon changes color depending on the Scheduler's status.

- Gray: The scheduler icon is gray when offline or if data is not being received.



**Figure 1-2: Gray icon**

- Green: The scheduler icon is green when it is online.



**Figure 1-3: Green icon**

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## 1.1.3 Icon Right-Click

At any time you can right-click the *Scheduler* icon to access a list of useful functions.
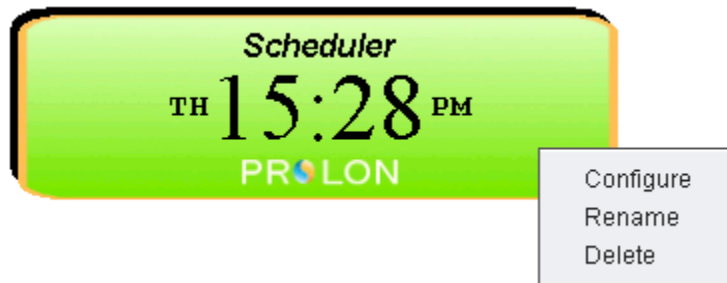


**Figure 1-4: Icon right-click for Scheduler**

- <u>Configure</u>: This opens the configuration screen for the *Scheduler* (same as double-clicking the icon).

- <u>Rename</u>: Lets you rename the *Scheduler*. Names are limited to 16 characters.

- <u>Delete</u>: Removes the *Scheduler* from your network.

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# 2  Network Scheduler Configuration

To view the configuration of a Network Scheduler in detail, double-click on its icon to see its configuration screen. Use the menus in the top left corner to navigate between the different sections.

## 2.1  Config Menu

### 2.1.1  Scheduler Home Page
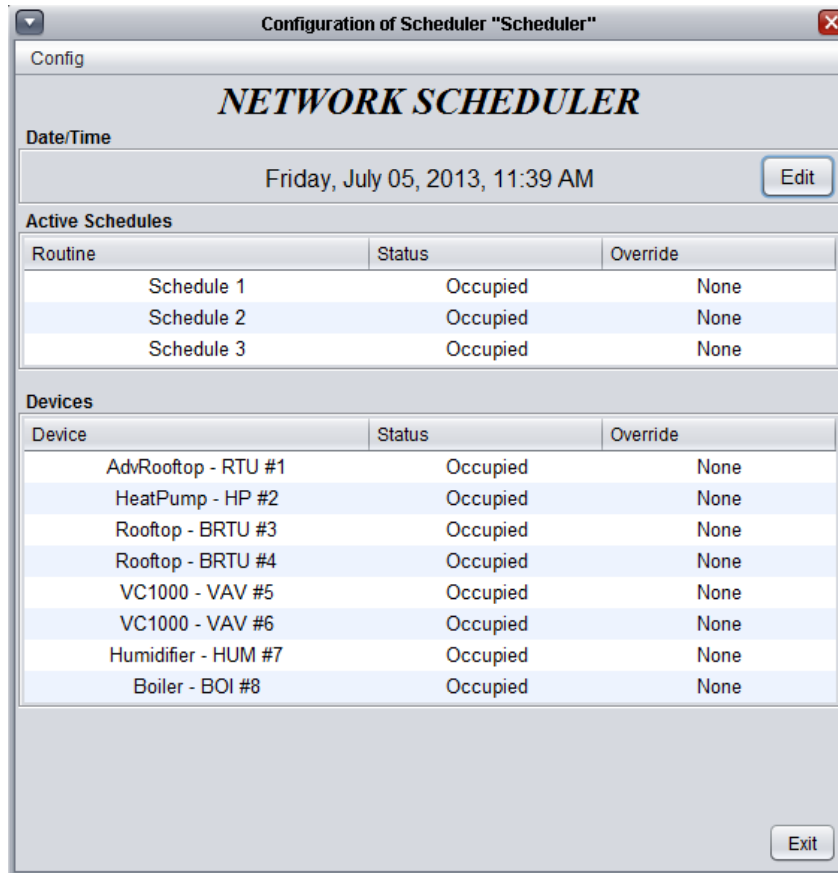


**Figure 2-1: Basic Rooftop home screen**

This screen shows the status of all the schedules and devices that are connected to the network and added to the scheduler.

## 2.1.1.1 Real Time

The *ProLon Advanced Rooftop* device has an internal real time clock. The current date and time is displayed at the top of the *Home* screen. To edit the time, click on the "Edit" button.



**Figure 2-2: Edit time button**

A window pops up allowing you to edit the time. Your computer's time is shown at the top of the window. You can copy your computer's time directly into the time of the *Rooftop* device using the "Copy" button, or simply edit the time yourself by directly typing it in the corresponding text box. A drop down list of time zones is also made available.

The use of daylight savings time can also be configured here. When set to automatic control, daylight savings will be enabled and disabled on Sunday at 2AM on the specified weeks.
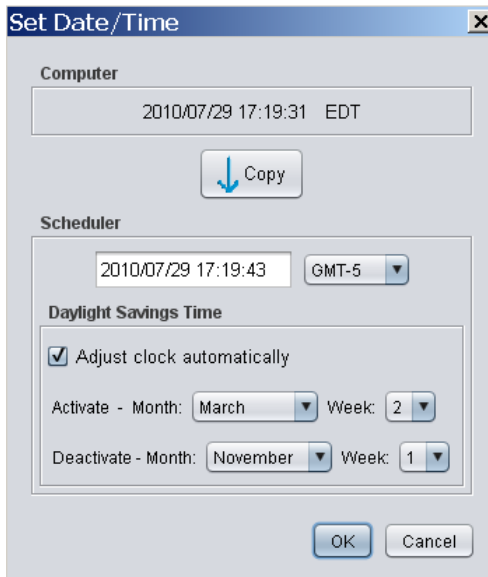


**Figure 2-3: Edit time dialog box**

## 2.1.1.2  Active Schedules

- Routine: The name of the existing schedule routines as specified when created. A default routine named "Schedule 1" is automatically created when the *Scheduler* is added to the network.

- Status: The current occupancy as defined by the schedule routine.

- Override: The override status. Double-clicking on the text area allows you to override the current status of the routine.

**Figure 2-4: Override Scheduler routine**

## 2.1.1.3  Devices

- Device: The name of the devices that are connected to the network and added to the *Scheduler*.

- Status: The current occupancy of the device in question.

- Override: The override status. Double-clicking on the text area allows you to override the current occupancy of the device.

**Figure 2-5: Override scheduled device**

## 2.1.2 Schedule Distribution
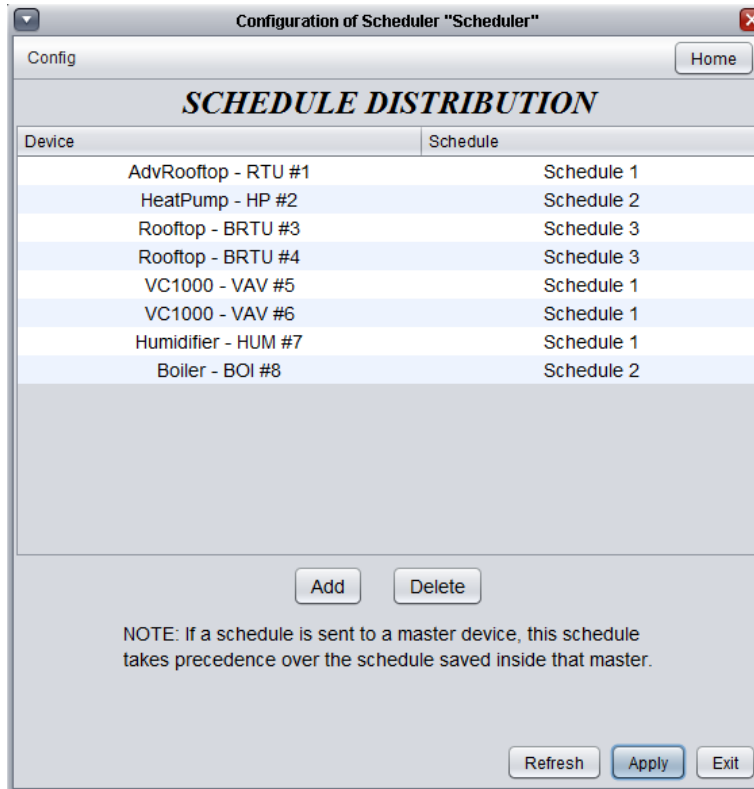


**Figure 2-6: Schedule distribution configuration screen**

This page allows you to add devices to the *Scheduler* and assign them schedule routines. Note that it is best to only send schedules to masters, since they already notify slaves of the occupancy status

### 2.1.2.1 Adding/Removing Devices

- Add: Lets you add a device to the list of scheduled devices.



**Figure 2-7: Dialog box to specify address of device to add**

- Delete: Lets you delete a device from the list of scheduled devices.

## 2.1.2.2 Assigning Schedules to Devices

The devices added to the *Scheduler* are listed on the top portion of the screen. You can set different schedule routines to each listed device. To select a schedule, double click on the schedule text area and choose the desired schedule from the existing ones. Refer to the *Weekly Routine* section (p.13) to learn how to create a new schedule.
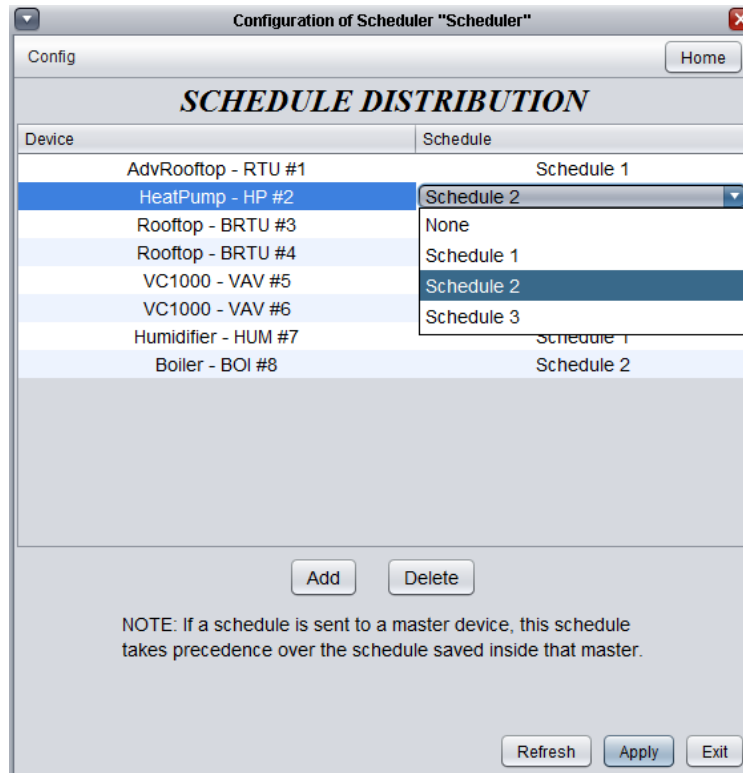


**Figure 2-8: Dialog box to specify a device's schedule**

- On the figure above, the schedule called "Schedule 2" is assigned to the *HeatPump – HP #2* device.

## 2.1.3 Outside Temperature Distribution
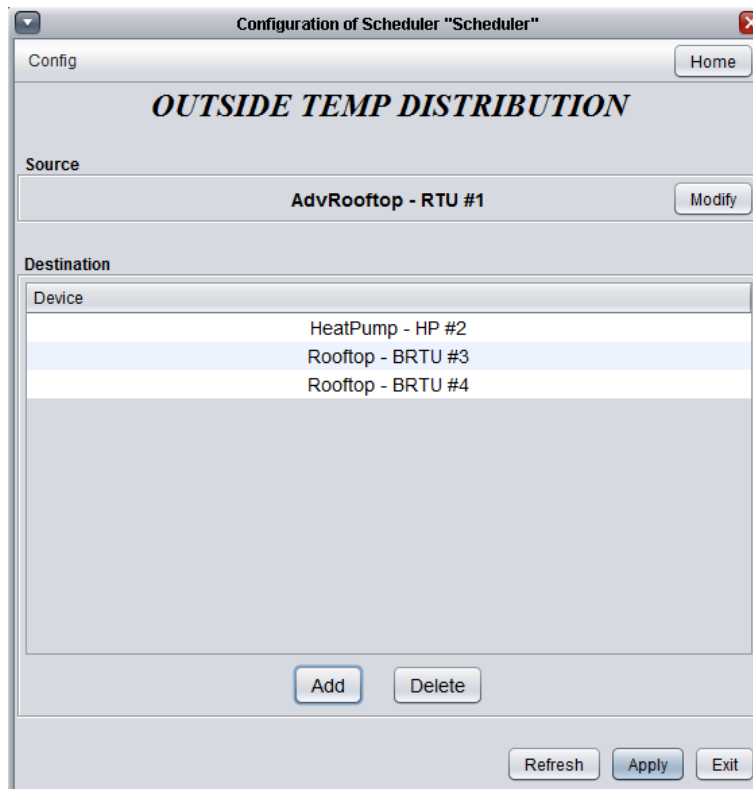


**Figure 2-9 : Outside temperature distribution configuration screen**

This configuration menu allows the system to read an outside temperature reading from a single controller and redistribute it to other controllers.

### 2.1.3.1 Outside Temperature Source

- <u>Modify</u>: Select to open outside temperature source window.

- <u>None (Disable this function)</u>: No outside temperature reading will be redistributed. Every master controller will read its own temperature reading.

- <u>Device</u>: Choose the controller which shall supply the outside temperature to be redistributed.
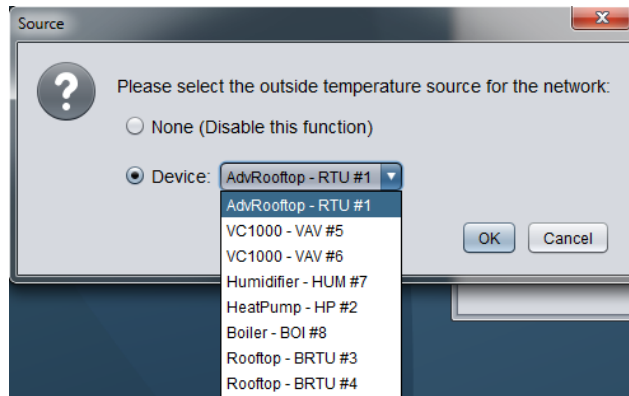
**Figure 2-10 : Outside temperature source selection**

## 2.1.3.2 Outside Temperature Destination

- <u>Add:</u> Lets you add a device to the list of controllers whose outside temperature is read thru the source
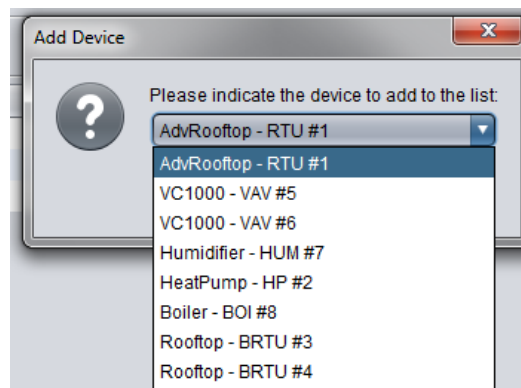


**Figure 2-11: Dialog box to specify device to add**

- <u>Delete:</u> Lets you delete a device from the list of controllers whose outside temperature is read thru the source

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## 2.1.4 Weekly Routines
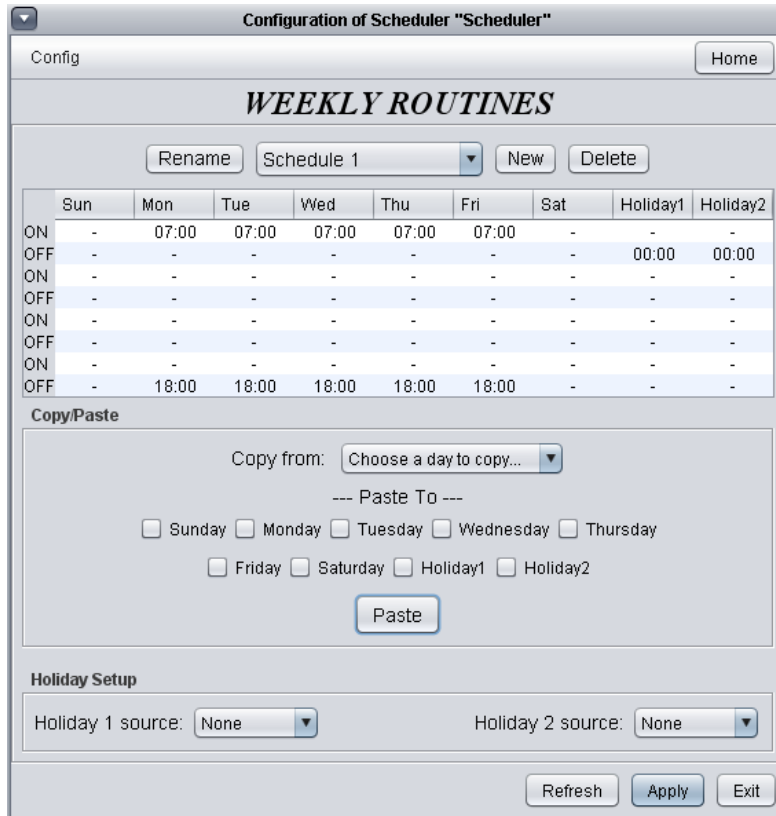


**Figure 2-12: Weekly routines screen**

This screen allows you to define new schedule routines or modify existing ones.

### 2.1.4.1  Creating/Deleting a Schedule Routine

- New: Create a new routine. When you click on the "New" button, a popup screen prompts you to enter the name or the schedule you want to create. The name you type here should not contain more than 16 characters.
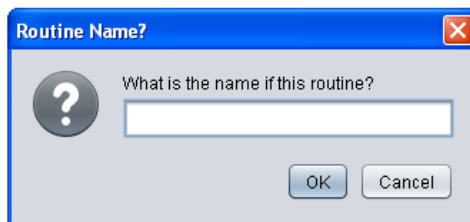


**Figure 2-13: Dialog box to specify name of routine to add**

- Delete: Delete the routine currently selected.

## 2.1.4.2 Routine Configuration

- Schedule Select: At the top center of the screen there is a drop down list that allows you to select the schedule to configure from all the existing schedules. When a new *Scheduler* icon is added to the network, a default schedule named "Schedule 1" is created.
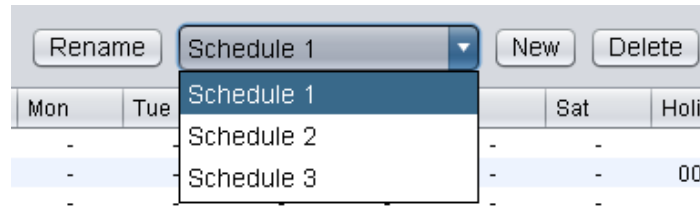


**Figure 2-14: Schedule select from list**
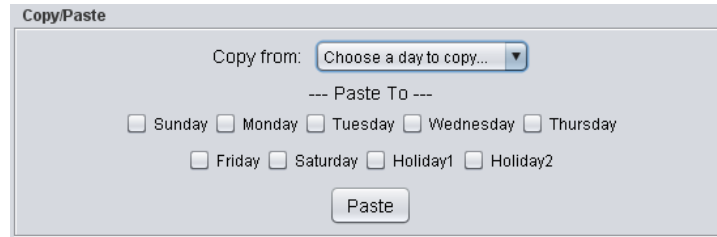
- Rename: The "Rename" button lets you chose a new name for the selected schedule.

- Weekly Schedule Grid: The *Weekly Schedule Grid* is used to define the weekly occupancy routine followed by the selected schedule. A device following the schedule will constantly refer to it to determine its occupancy status.



**Figure 2-15: Weekly schedule grid**

The occupancy status remains the same until its set to a different value on the weekly schedule grid. For example, on the routine above, the device will be set to "Occupied" at 8h00 AM on Monday, and will remain in that state until the following Wednesday at 17h00 PM. At that time it will be set to "Unoccupied" until Thursday at 8h00 AM and so on. The days 'Holiday1' and 'Holiday2' will replace normal weekdays when the current date is defined as a holiday in the calendars specified in the holiday sources 1 and 2, respectively (see "Holiday Source" below).
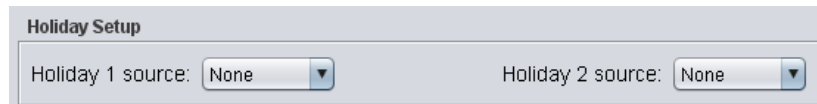
- Copy/Paste: The *Copy/Paste* function makes it easy to copy a particular day's schedule and apply it to other days of the week. Simply choose a day to copy from the drop down list, select one or more days to paste to then click the "Paste" button.

**Figure 2-16: Copy/Paste function**

- Holiday Source: The *Weekly Schedule Grid* allows the setup of 2 holiday routines. The dates to which those holiday routines apply are determined in a source holiday calendar. That source calendar is selected from the drop down lists in the *Holiday Setup* section. Source holiday calendars can be created and defined in the *Holiday Calendar* screen (p.16). When a new *Network Scheduler* is added to the project, an empty holiday calendar named "Calendar 1" is created.



**Figure 2-17: Holiday sources**

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## 2.1.5 Holiday Calendar



**Figure 2-18: Holiday calendar screen**

The holiday calendar is used to specify a set of dates to which the holiday routines from the *Weekly Schedule Grid* (see p13.) can be applied to. All holiday calendars created here will be added to the drop down lists of holiday sources in the *Holiday Setup* section of the *Weekly Schedules* screen (see p.13)

### 2.1.5.1  Creating/Deleting a Holiday Calendar

- New: Create a new holiday calendar. When you click on the "New" button, a popup screen prompts you to enter the name or the holiday calendar you want to create. The name you type here should not contain more than 16 characters.
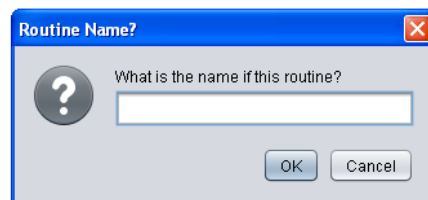


**Figure 2-19: Dialog box to name a calendar**

- Delete: Delete the holiday calendar currently selected

## 2.1.5.2 Holiday Calendar Configuration

- <u>Calendar Select</u>: At the top center of the screen there is a drop down list that allows you to select the calendar to configure from all the existing calendars. When a *Scheduler* icon is added to the network, a default empty calendar named "Calendar 1" is created.
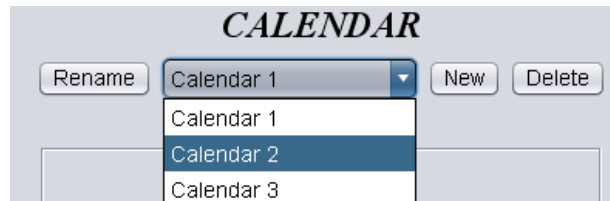


- <u>Rename</u>: The "Rename" button lets you chose a new name for the selected calendar.

- <u>Calendar Dates</u>: Focus allows you to choose on any number of dates from the calendar provided that could be set to use a particular holiday occupancy routine defined in the *Weekly Schedule* screen. To select/unselect a date, simply click on it. You can flip through the different months by clicking on the arrows at the bottom or by simply choosing the desired month from the drop down list of months.

## 2.1.6 Alert Configuration
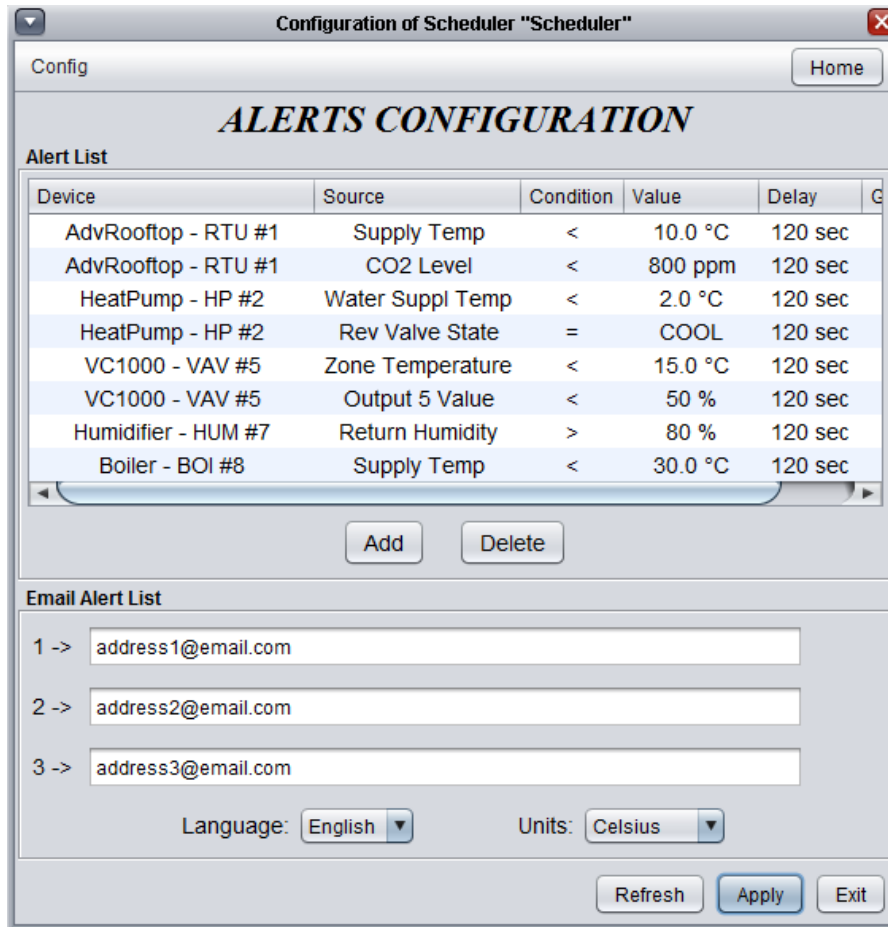


**Figure 2-20: Alerts configuration screen**

Alerts can be configured to monitor one or several variables on any controller at all times. A total of 100 alerts can be created.

## 2.1.6.1 Add/Delete an Alert

- Add: Allows you to add a new condition to monitor within the system.
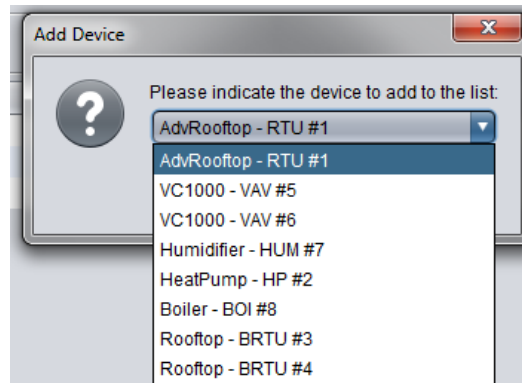


**Figure 2-21: Dialog box to specify device to add**

- Delete: Allows you to delete an existing condition

## 2.1.6.2 Configure Alerts

- <u>Device:</u> The device which is being monitored

- <u>Source:</u> Choice of variables to monitor on a specific controller (double-click)

- <u>Condition:</u> Establish a condition to the variable chosen ('bigger than', 'less than', 'equal to')

- <u>Value:</u> Establish the reference value for the monitored variable.

- <u>Delay:</u> Establish the delay for which the condition must be met before sending off an alert

- <u>Group:</u> This option allows for several conditions to be grouped together so an alert will not be sent until all the conditions of a certain group have been met. Up to 50 groups possible

## 2.1.6.3 Email Alert List

- Email addresses: the created alerts can be sent to up to 3 separate email addresses.

- Language: Select the email alert's language (English or French).

- Units: Select the email alert's temperature units (Celsius or Fahrenheit)

## 2.1.7 Datalogging Configuration



**Figure 2-22: Datalogging configuration screen**

This configuration menu allows you to configure the Datalogging feature. Any variable from any controller can be logged onto an SD card using two modes: Interval or Offset (difference explained below). The Datalog file is a Microsoft Excel spreadsheet (*.xls).

All memory values shown in the menu can be expressed in bytes, KB (kilobytes), MB (megabytes) or GB (gigabytes).

## 2.1.7.1  Add/Delete a Datalog

- Add: Allows you to add a controller in the Datalog list which will be monitored. By clicking on it, choose the wanted controller.



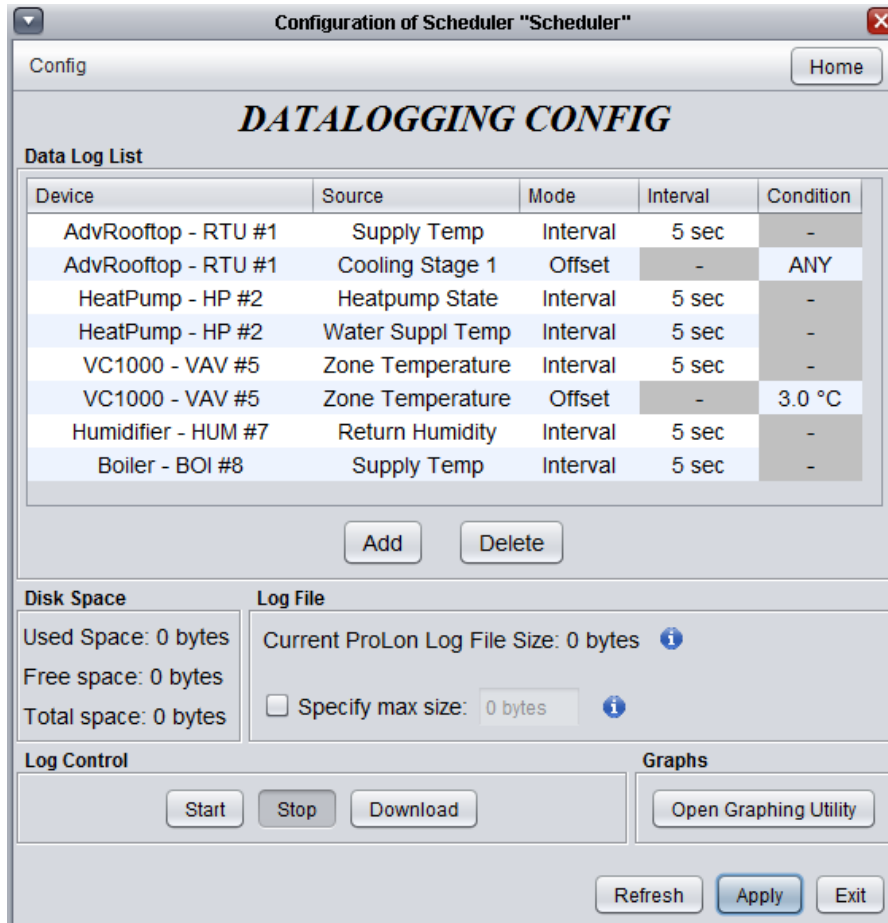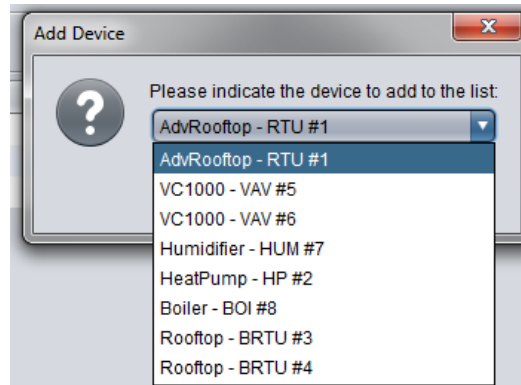**Figure 2-23: Dialog box to specify device to add**

- Delete: Allows you to delete a datalog.

## 2.1.7.2  Data Log List

- Device: The device whose variable is being logged.

- Source: Choose which variable will be logged (double-click)

- Mode: Choose the log mode (double-click):

    o Interval: Records information at a fixed interval.
    (e.g. record the supply temperature every 5 seconds)

    o Offset: Records information when the variable changes by at least the offset value
    (e.g. record the supply temperature when it has changed by at least 1ºC)

- Interval: Establish the recording interval of the specific log (if Mode=Interval)

- Condition: Establish the offset value for the recorded variable (if Mode=Offset)

## 2.1.7.3  Disk Space

This presents the current state of the SD card which is inserted into the Network Scheduler

- Used Space: the memory space currently used on the SD card.

- Free Space: the memory space currently available on the SD card.

- Total Space: the total memory space on the SD card.

### 2.1.7.4  Log file

You can verify the size of the actual datalog file on the SD card. By positioning the cursor on the

button, the following information is displayed:

- - Estimated time to download: the estimate of time it will take to download the current log file thru the internet.

- - Number of samples: the amount of data samples on the current datalog file.

- - % of available space remaining: the percentage of available space remaining compared to the specified maximal file space (see below)
- • Specify max size: by selecting this option, you can limit the maximal size of the datalog file. Once the specified maximal file size has been reached, the datalog will continue to record information by replacing the oldest values with the most recent readings. By

  positioning the cursor on the        button, the following information is displayed:

  - - Estimated time to download: the estimate of time it will take to download the datalog file for the maximal specified size thru the internet. (NOTE: it is strongly recommended to download the datalog file by inserting the SD card directly into the computer rather than downloading it thru the internet, the transfer speed being much faster)

  - - Number of samples: the maximal number of samples which can be recorded according to the specified maximal file size and the number of datalogs to record.

  - - Log time: the duration of time it will take for the datalog file to reach the specified maximal file size.

### 2.1.7.5  Log Control

- • Start: The recording of data will begin as soon as the button is pressed.

- • Stop: The recording of data will stop as soon as the button is pressed.

- • Download: Push this button to download the datalog file onto your computer.

## 2.1.7.6  Graphs

### 2.1.7.6.1   Open Graphing Utility

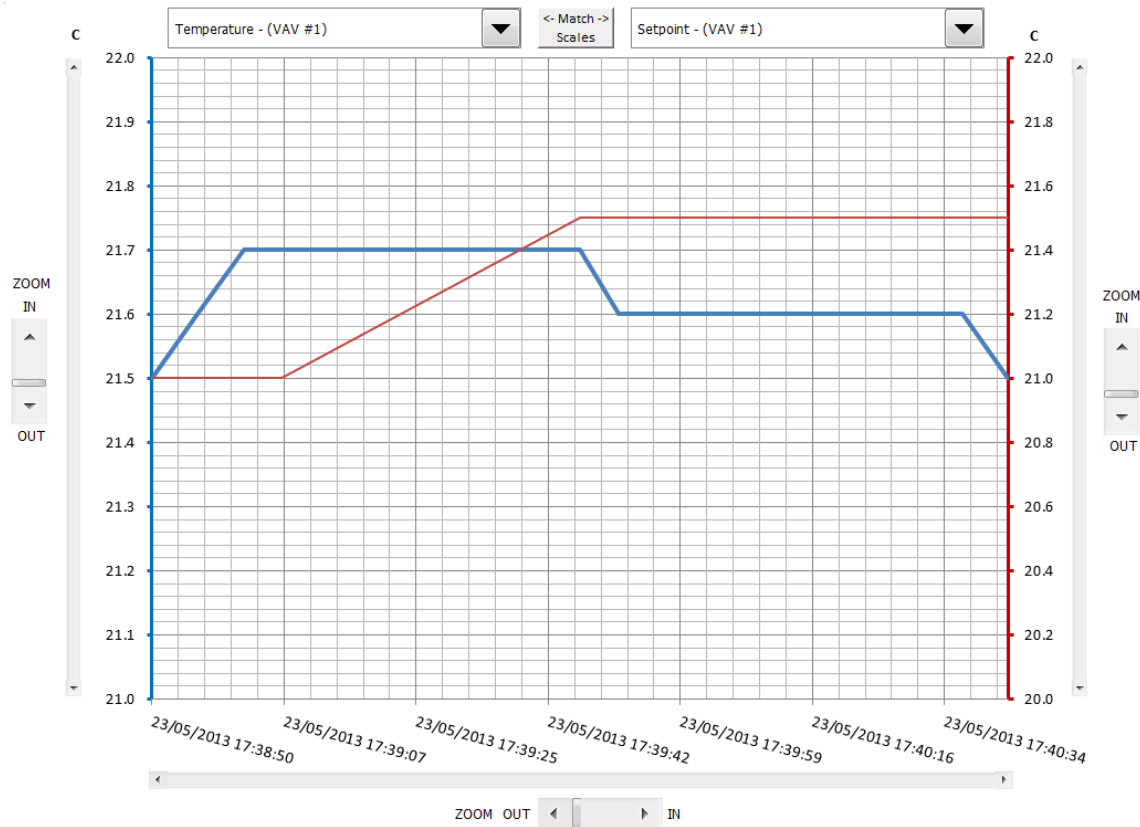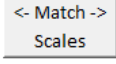- When this button is pressed, Microsoft Excel will open automatically and will prompt you for the datalog file.



**Figure 2-24: Graphing utility screenshot**

### 2.1.7.6.2   Datalog in Microsoft Excel

Two variables can be displayed simultaneously in the Microsoft Excel template. The selected variable on the left-hand side is represented by a blue line and the right-hand side variable is represented by a red line.

- Variable selection: the variables are displayed above the graph. Any variable which has a log can be compared to a second variable by selecting them in the boxes located above the graph.

- Match Scales: if the two selected variables have the same unit of measurement (temperature, state, position, percentage, etc), press the [<- Match -> Scales] button located between the variable selection boxes, to match the scales of each variable.

- Zoom: to enlarge or shrink a scale, press on the 'ZOOM' scroll bar beside the each scale

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## 2.1.8 Communications Setup

It is possible to communicate with the *Network Scheduler* through an Internet connection or serial connection (RS232 – DB9). In the case of an internet connection with a router, ensure that port **502** on the router is open.



**Figure 2-25: Communications setup screen**

- MAC Address: The hardware unique MAC address of the *Scheduler*. This value is not configurable.

- IP Mode: The method used to give the *Scheduler* its IP address. Two options are available:
  - **Static** Manually provide the *Scheduler* with an IP address. The address is static therefore will remain the same each time the *Scheduler* is powered up. If this option is selected, the following fields will need to be manually configured: *IP Address*, *Subnet Mask* and *Default Gateway*.
  - **DHCP**: Dynamically provide the *Scheduler* with an IP address. This means every time the *Scheduler* is powered up a new IP Address is given using the DHCP Internet application protocol.

- IP Address: The IP address of the *Network Scheduler*. You must click "Apply" then "Reset" (from the *Device Properties* screen) for the changes to take effect. The default value is 192.168.111.215.

- Subnet Mask: The subnet mask value. You must click "Apply" then "Reset" (from the *Device Properties* screen) for the changes to take effect. The default value is 255.255.255.0.

- Default Gateway: The default gateway used. You must click "Apply" then "Reset" (from the *Device Properties* screen) for the changes to take effect. The default value is 192.168.111.1.

- Baud Rate: The baud rate value used by the *Scheduler* to communicate serially. The default value used 57600bps but may be set to any of these standard values: to take effect.
    - 9600 bps
    - 19200 bps
    - 38400 bps
    - 57600 bps
    - 76800 bps
    - 115200 bps

  You must click "Apply" then "Reset" (from the *Device Properties* screen) for the changes

## 2.1.9 Device Properties



**Figure 2-26: Device properties screen**

- <u>Device Type</u>: The type of controller you are configuring.

- <u>Software version</u>: The current software in the controller. The greater the software version, the more advanced the device is. Devices can be upgraded by reprogramming them (see "Reprogram" below).

- <u>Hardware version</u>: This is the physical nature of the controller. Different hardware has different features. The hardware can only be changed by replacing it physically.

- <u>Device Number</u>: The network address of the controller. By default, the *ProLon Network Scheduler*'s hardware is set to address 99. You can change the address though Focus by typing a new number, clicking the "Apply" button then resetting the device by clicking the "Reset" button. You cannot manually change the *Scheduler*'s device number.

- <u>Device Name</u>: This field indicates the current name of the controller, which you can modify. This is the same as just right-clicking on the icon and selecting the "Rename" option

- <u>Reset Device</u>: Causes the device to perform a reset. All configuration properties REMAIN SAVED. However, resetting the controller removes all active overrides.