Sensatronics Senturion Environmental Monitor
Operations Manual

Farrall Hall Annex installation

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**Opening disclaimer:**

This is not the official manual of the Sensatronics Senturion Environmental Rack monitor, but is based on the official manual and the original setup of this unit in the MSU-Farrall Annex. The authors of this manual are not liable in any way for any related issues to this unit that may occur. This unit is equipped to receive firmware downloads, which means that procedures in this manual may be altered in the future. Any needed technical support that can not be achieved with this manual can be found by contacting Sensatronics directly.

Submit an online ticket: support.sensatronics.com
Support Forum: www.sensatronics.com/bboard/
Telephone: 1 (800) 633-1033 or (603) 224-0167

**Product Overview:**

This unit is an environmental monitoring system that has been implemented into three existing refrigeration units located in the Farrall Hall Annex. The primarily used sensors of this setup are three external temperature/relative humidity probes (One probe located in each refrigeration unit). The secondary sensors consist of temperature, relative humidity, light and noise level probes located internally to the monitor itself. Although these secondary probes are all fully functional, they are not important to the current application. These sensors will allow the unit to log conditions as well as alert users of problematic conditions.
Initial Setup/Connect:

Item list:
1 – Senturion Environmental Monitor
3 – Senturion External Temp/RH Probe
1 – Senturion Power Supply cord
1 – Ethernet cable
1 – Uninterruptable Power Supply (purchased separately from Senturion items)

Mounting:
1. The actual monitor should be mounted to a secure location that is out of the path of traffic or other dangers using appropriately sized screws and the screw holes premade into the unit. Be sure that the unit is fastened securely and not at risk of falling off. Be sure to consider cord lengths and distances to necessities such as power outlets and an Ethernet port. In its original installation, a location was chosen on the annex wall behind and to the right of the refrigeration units. This placement is approx. 6 ft. above the floor.

2. Map out the desired path for the cables connecting the probes in their desired mounted position and the ports of the mounted monitoring unit. Then make the necessary measurements and inspections to ensure that this cable path is away from danger, short enough so that all cables will reach between the two without stress, and that this path allows for required conduit to protect the cable. If the cable holes in the refrigeration units used in the original installation are not used, be sure that creating holes in the new desired locations will not cause problems and that the previous holes are adequately sealed.

3. Mount all probes in their desired locations and run the cables through adequate conduit back to the monitoring unit location, but do NOT connect them to the unit just yet. Place/mount the UPS in a safe location, then plug it into a 120V AC outlet. Next, connect the monitor to a suitable Ethernet port. Next, plug the monitoring unit into the UPS. It is now ok to plug the external probes into the monitoring unit.
**Unit Configuration:**

1. A static IP of 35.8.18.49 is needed for access to the system interface from any computer. If network mode becomes switched from Static to DHCP, the system will default to an IP that will be displayed on the front of the units LCD readout. This IP can only be accessed while logged on to the same network as the unit itself (local area network of Farral Hall).

2. The monitor originally begins with two default user accounts from the factory. Profiles may have been added/deleted/changed since its original installation. The two default accounts are named “admin” and “op” and their default passwords are exactly the same as their names (if the only admin password is lost, the system can be reset to restore the default password, (see reset description in the Operation section of this manual). Users may be added, edited, or deleted via the buttons on the Admin->Users tab. Users can be established as one of three categories:
   - View – Limited to viewing the current and historical data
   - Op – Has the abilities of the view type, and can also acknowledge alerts and make log entries
   - Admin – Has the abilities of the View/Op types, and can also change any setting and manage other users

3. Configure the network by inputting the correct info into the Admin->Network tab. Be sure to click ‘Save’ afterwards. The unit will reboot. If you have changed the IP address, then you will now need to navigate to this new address.

4. Ensure that the external probes are connected. The unit will automatically detect probes and their type. Under the Admin->Probes tab, users can configure all probe settings such as names, high/low thresholds and alert list. Thresholds are the boundaries at which the environment conditions are unacceptable. Alert list is a list of people that the unit will contact and their contact info, should an alarm situation occur.

5. Select the Admin->Alerts tab. This will bring you to a list of eight customizable action list for the unit to execute during an alert cycle. Within these list, users can customize what action to
take, how many consecutive alert condition scans should take place before executing this action, and, if the action requires a specific contact, who the unit should alert. When setting the count variable, be sure to remember how often you have or will program the unit to scan. For example, if you would like the unit to execute an alert action after 5 consecutive minutes of unacceptable conditions and the unit is configured to check conditions every minute, then set the count variable at 6.

6. Click the Admin->Misc tab. Here users can manipulate the unit’s name, it’s MAC, whether or not to allow view without login, the probe scan interval, the default alert delay, the time/date, and the temperature scale. The probe scan interval is listed in seconds. The default scan interval is 60 seconds. With this interval, the unit can store data for roughly 30 days. The smaller the interval, the more frequent the readings. The larger the interval, the longer the unit can successfully store data. The mininum interval is 5 seconds. This setting also applies to all probes, both internal and external.
Operation:

To begin operation, navigate to the correct IP (currently http://35.8.18.49) address into your web browser and then log in with a correct username and password. The Sensatronics Senturion web interface will be displayed. When finished with current operation of the unit, click the Logout button before exiting the device operations pages.

Note: If you have not obtained a user account, contact a user with admin status and have them create an account for you. As many as eight total users can be created on the system.

View Tab:

Here you can view the current readings of the probe, logged data, and acknowledge alerts.

- To view logged data of a probe, click on its current reading under the reading column.

This page displays a recent history of logged data for that particular probe, as well as a
User may also view older readings by clicking the Older link button, as well as refresh this list to include the most recent readings by clicking the Refresh newest link button. User may also save the current probe history to a .csv file by clicking the Save Probe Data button.

- If a probe reading goes beyond the established thresholds, the status of this probe will change from ‘active’ to ‘alert’ and will be followed by an indication of if the current reading is high, low, or unavailable (NC). To acknowledge this alert, click on the alert link of the desired probe, displayed under the status column. This will bring the user to the Acknowledge page which allows the user to acknowledge the current alert, while also stating the action taken in response to this alert.

**Camera Tab:**
This is where the user may access and control any cameras connected to the system. At the time of this publication, no cameras were implemented in the original design of the refrigeration monitoring system.
Log Tab:
Log tab allows user to view any system activity, whether automatic or user initiated.

- Users may save this log via a .csv file by clicking the **Save Log** button or clear this log by clicking the **Clear Log** button.

- Users may retrieve the most recent log entries by clicking the **Refresh newest** link button, as well as retrieve older log entries by clicking the **Older** link button. It is also possible to create a new log message within the log history by clicking the **Add Entry** link. This will bring the user to the New Log Message page, where it is possible to create a new log entry.
Admin Tab

Network Section
Here user may set desired network settings, SMTP server address, return address, and SMTP username and password (if needed).

- By entering in the corresponding information into the text fields, it is possible to configure the current network settings needed.
- User may select between DHCP and static network options

Note: In order to maintain remote access to the unit, via any computer with an internet connection, unit must operate with a static IP configuration and the following network settings: IP address(35.8.18.49). Primary DNS(208.67.222.222). Backup DNS(208.67.220.220). Webserver port value of ‘80’.

User Section
This page allows for adding, editing, and deleting of Senturion user accounts.

- When you are satisfied with your settings, click the save button. The unit will automatically reboot
To add user, click the add user button. Add user page will be displayed. Fill out the required user information, including the user access level. Possible user access levels are View, Ops, and Admin. View level users are only allowed to view current/historical readings within the unit. Ops users may view readings within the unit, as well as acknowledge alerts and make log entries. Admin level users have the same abilities as View/Ops users, as well as to change any settings and manage other users. When information fields are completed, press the Save button to store information and create new user. User may also select the Save and Test Email button to execute the same actions as the Save button, as well as send a test email to the listed email address to ensure that settings are correct and unit is functioning properly. If user does not wish to create this profile, click the Cancel button, and the info will not be stored.
• Clicking the Edit button after a user’s name on the user page will bring you to a page identical to the Add user page. This page will already be completed with the user’s current info and will allow them to change any info they would like. When information fields are completed, press the Save button to overwrite previous information. User may also select the Save and Test Email button to execute the same actions as the Save button, as well as send a test email to the listed email address to ensure that settings are correct and unit is functioning properly. If user does not wish to overwrite previous information, click the Cancel button, and the info will not be stored.

• For any user accounts that are no longer wanted on the system, Admin users may click the Delete button listed after their name. This will bring them to a Delete screen that gives the user the option to confirm the deletion of this account or to cancel the deletion of this account.

Probes

This page will show you a current list of all probes that are being monitored by the system.

• Probes are labeled by name, as well as their Probe ID determined by the port it is connected to. To add a new probe, simply connect it to an open port on the monitoring unit, and it will be detected/configured automatically. To edit any information about a selected probe, click the Edit link button listed in the same row as the probe. This will take the user to the Probe editing page.
• This page lists the name that the probe is listed as, the type of probe it is, the selected alert schedule, the high/low threshold limits, the selected alert list, and the alert delay. Every one of the previous categories can be edited by the user except for probe type. Once all categories have been configured to their desired information, press the Save button to store these settings. To discard this info and return to the previous settings/info, press the Cancel button.

• To delete a probe from the logging list, click the Delete link button in the same row as the probe. This will navigate to a page that asks the user to confirm or cancel the deletion of this probe.
Alerts

This page will allow you to view, edit, and delete a list of possible alert option configurations.

- This page displays a list of 8 possible alert configurations. Even rows without names are operational configurations which may be selected. To view the configuration of a list or to change these options, click the Edit link button listed in the same row as the list.

- On the Edit Alert page, users may configure the name of the selected list, as well as up to 8 possible responses during an alert situation. The ‘At count’ variable is based on how
many consecutive probe reading scans are in alert conditions. The Probe Scan Interval that is configured in the Misc tab should be taken into consideration when setting the At Count variable. Each Probe Scan is 1 count. If the Probe Scan interval is set to scan every minute and the user wishes for an alert action to occur after 5 consecutive minutes, then the At Count variable should be set at ‘6’ (1 for initial alert condition scan and 5 for the 5 consecutive minute scans afterwards). Possible actions are:

  - No action: Unit does nothing.
  - Send email #1 to: Sends pre-written email message #1 to a dropbox selected user
  - Send email #2 to: Sends pre-written email message #2 to a dropbox selected user
  - Reset List: Causes alert list count to reset
  - LED Flash: Flashes the LED lights on the front of the unit itself bright red
  - Buzzer on: Unit will emit an audible buzzing alert
  - SNMP Trap: Send current readings during the alert to your trap server, if one is set up.
  - Use External Dialer: Unit will begin to call designated users with a pre-recorded message

When all settings are as desired, click the Save button to store changes to this list. If the user prefers to restore the list to the way it was configured prior to entering the Edit page, click the Cancel button to discard all changes.

- Users may also clear the configuration of any alert list by clicking the Delete link button. This will send the user to a page that ask to either confirm or cancel this action.

Schedules
This page allows users to configure the active scheduling of probe status updates, as well as alert actions.
• This page displays the current Status Email Schedule, as well as the list of 8 alert schedules. The Status Email Schedule displays the currently selected days of the week and the time of the day (Military time) to begin sending email status updates. The Schedule name list displays the names of each schedule as well as the start and stop times (Military time) of possible alert reactions that have been configured for them. To configure any of these, click the Edit link button listed in the same row as the desired list.

• By clicking the Edit button for the Status Email Schedule, the user will be given the options of selecting which days of the week to send out status alerts, what time of the day to begin these updates (rounded to the nearest 15min. interval. Ex. 08:21 will be viewed by the unit as 08:15), and which users to send these updates to. When settings are as
desired, click the Save button to store this configuration. If user wishes to discard any changes made, click the Cancel button.

- By clicking the Edit button of a schedule, users may edit the name of an alert schedule, as well as the Start and Stop times for the alert actions list to remain active (rounded to the nearest 15min. interval. Ex. 08:21 will be viewed by the unit as 08:15). When settings are as desired, click the Save button to store this configuration. If user wishes to discard any changes made, click the Cancel button.

- The configuration of any of these schedules may be cleared easily. To clear the current configuration of the Status Email Schedule, click the Clear link button within its row. This will prompt the user to confirm or cancel this action. To clear the current configuration of any of the Schedules, click the Delete link button within its row. This will prompt the user to confirm or cancel this action.

SNMP/Syslog
This page allows for configuration of the SNMP/Syslog settings.
• All options for the SNMP/Syslog settings are listed solely on this page. Once configuration is completed, click the Save button to store these settings. If the user wishes to discard any changes, click the Cancel button.

Cameras

This page allows for full configuration of any connected camera settings.
• All camera settings are solely listed on this page. Once configuration is completed, click the Save button to store these settings. If the user wishes to discard any changes, click the Cancel button. At the time of this publication, no cameras are currently implemented with this system.

Misc

This page allows for any miscellaneous unit settings to be configured.

• All miscellaneous unit options are listed solely on this page. These options include the Unit name, whether to allow view of readings without a login, the probe scan interval (in seconds, minimun 10), Default alert delay, Temperature scale, NTP Time Server or Time selection/settings, and the Time zone/daylight savings time adjustment settings. Probe scan interval setting is attached to all probes. There is no individual probe setting for this option. Users may save a copy of these settings outside of the unit to a .part file by clicking the Save Config button near the upper right corner of this page. Users may also load previously saved configuration files by clicking the Load Config button and then selecting the appropriate file. Once configuration is completed, click the Save button to store these settings. If the user wishes to discard any changes, click the Cancel button.

Diag

This page list the current diagnostics info of the unit.
The diagnostic info listed on this page includes the Firmware Server, SMTP Server, NTP Server, and the FWS.

Users may send a test email to an eligible user account by selecting the user from the Test Email dropbox and clicking the Send Email button.

Users may also Factory Reset or Reboot the unit by clicking the corresponding button. Rebooting the unit will simply shut down the unit and restart it with the current settings. Factory resetting the unit will shut down the unit, delete all current settings, and restart it with the original settings from the factory.

**Support**

This tab allows users to view information about any firmware update options as well as related unit news and technical support options. There are plenty of options listed on this page, however because this page is constantly changed/updated by Sensatronics over the web, it is not possible to document what will be available on this page.
External Unit Options

The unit may also be manipulated in a variety of ways via controls located on the unit itself. Buttons may receive further actions via future firmware updates.

Up/Down Arrows Button
These buttons are currently inactive, and may be activated via a future firmware update.

Enter Button
This button may currently be used to acknowledge alerts.

Reset Button
To reset the monitoring unit, use a thin object to press the reset button, located in the front panel of the monitor within an access hole. There are two ways to reboot. By briefly pressing this button, the unit will reboot the unit, but keep its settings. By keeping this button depressed throughout the reboot cycle (front panel will cycle through colors), the unit will be reset to factory defaults.

**Troubleshooting:**

The unit does not work – what is wrong?

If the front panel is not lit, verify power is reaching the device.

I can neither ping the unit nor display its internal Web page.

Verify the unit’s IP address and network mask to ensure that they are valid for your LAN/WAN.

Ensure that once you have entered your IP address and network mask settings that you have saved them.

Verify that your switch or hub is properly configured to work with the 10Mbps data rate at which the Ethernet interface is running.

I can display the Senturion’s main/index page, but I cannot get to its other URLs (e.g., /xmlData).

This may be due to a proxy server. Try bypassing the proxy or configure the proxy to allow this traffic.

I get a temperature reading of -999.9.

This temperature reading indicates that the probe for that position is not connected.

Check the line to ensure you have a solid connection to the device. Verify that the line between the probe and the device has not been cut. If this is not the case, try a soft reset.
by depressing the reset button. If the problem persist, try a hard reset by unplugging the
monitor from power, waiting 30 seconds, then plugging it in again.

I get a temperature reading of 255.0.

This temperature reading indicates that there is a short in the line, typically caused by the
two probe leads touching each other. Check the line for damage. If this is not the case, try
a soft reset by depressing the reset button. If the problem persist, try a hard reset by
unplugging the monitor from power, waiting 30 seconds, then plugging it in again.