



SURNA
SENSORS,
CONTROLS, &
AUTOMATION

Surna SentryIQ™ Central Plant Controller

The Surna SentryIQ™ Central Plant Controller is an intelligent approach to controlling and monitoring a cultivation facility. It features proprietary controls sequences developed with predictive algorithms essential to optimum climate control. Those controls include direct temperature and humidity control as well as CO₂ monitoring. The system controls multiple pieces of industrial heating and cooling equipment precisely to sophisticated engineering sequences ensuring all of the equipment acts as one large system.

- Chillers • Dry Coolers • Boilers • Variable Frequency Drives • Pumps • Modulating Valves • Other Exterior Equipment

Specifications:

• UL-508a listed control panel

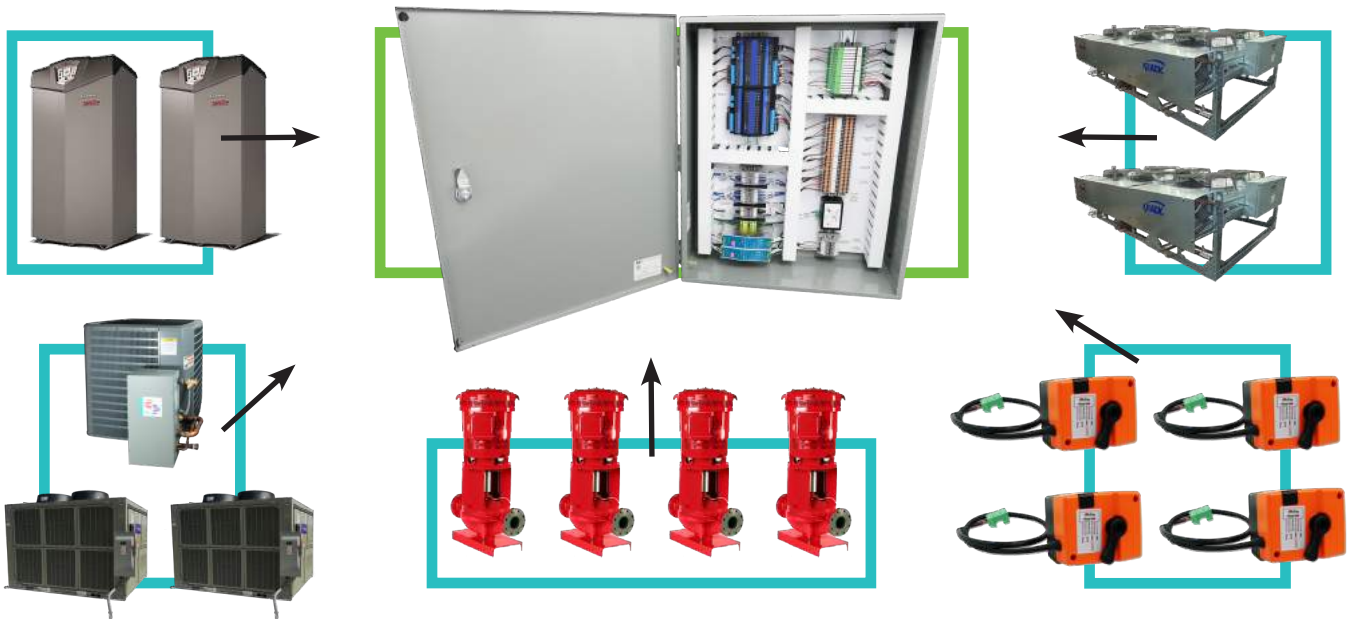
- Supports JAVA Web Start without JAVA Plug-Ins
- Powered by Niagara 4
- Standard Niagara 4 drivers – BACnet and Modbus
- 10/100 Mbps Ethernet (2), RS-485 (2), Mini-B USB (1), Micro USB (1)

- Standard RS-485 multi-drop communication bus
- 4B eMMC flash memory
- 1GHz AM335x ARM Cortex A-8 Processor
- Real-time Linux OS

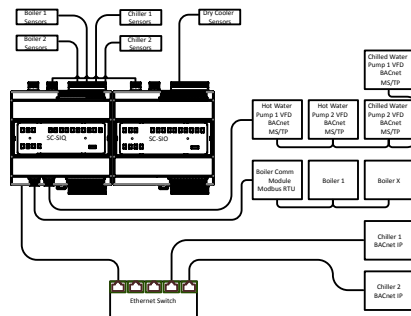
• Security

- A Public Key Infrastructure is used to secure the transfer of data that supports the Transport Layer Security (TLS) protocol, versions 1.0, 1.1 and 1.2.
- TLS replaces its predecessor, Secure Sockets Layer (SSL)
- The required use of signed code modules ensures that only expected code runs in the system.
- Authentication requires users to choose strong credentials, and both data in motion and sensitive data at rest are encrypted.
- Uses Role-Based Access Control (RBAC), making user permissions easy to configure and less error-prone. All user actions and security-related events are recorded in an audit log for traceability.

PLANT CONTROLLER DIAGRAM



CONTROL PANEL



Surna SentryIQ™ Room Controller

Cultivators are incorporating equipment that needs sophisticated sequencing to ensure the system operates as designed. The Surna SentryIQ™ Room Controller has custom control sequences for industrial equipment to provide temperature and humidity controls while monitoring and recording temperature, humidity, CO₂, VPD, light statistics and cooling loop zone performance. Each room will have its own controller, ensuring the whole facility remains operational if one room is taken out of service. Every Surna Room Controller comes equipped with 4 precision digital indoor sensors with aspirated fans actively drawing the canopy air in and through the measuring device 24-hours per day providing a highly accurate reading of temperature, humidity, and CO₂ within the cultivation spaces.

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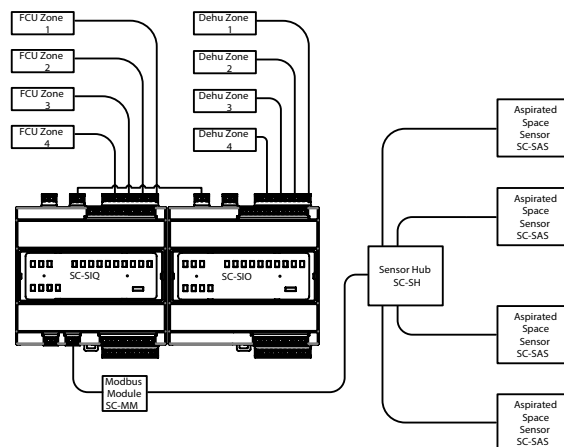
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ROOM CONTROLLER DIAGRAM



CONTROL PANEL



Surna SentryIQ™ Facility Supervisor

The SentryIQ™ Facility Supervisor delivers intelligent management of data with schedules, trends, monitoring and system alarms, providing visual insight to every room within your facility. The user dashboard is located within the SentryIQ™ Facility Supervisor where the user interacts with the system. The Surna Facility Supervisor provides valuable insight to cultivation facility owners to predictably manage their facility.

Trends at any point within the system can be found including:

- **System performance** • **Schedules** • **Trend data**

Also, within the dashboard the user can:

- **Monitor data** • **Set alarms** • **Acknowledge alarms** • **Receive offsite notifications**

***Custom programming is available for data points not listed above**

Specifications:

- Powered by Niagara 4
- Qualcomm Wireless QCA9377 1x1 driver
- Internal Wireless Antennas
- Qualcomm QCA9377 Dual-band 1x1 802.11ac Wireless with MU-MIMO + Bluetooth 4.1
- M.2 256GB SATA Class 20 Solid State Drive
- 8GB 1X8GB DDR4 2666MHz Non-ECC
- Win 10 Pro 64 English, French, Spanish
- Intel Core i5-8500T (6 Cores/9MB/6T/up to 3.5GHz/35W); supports Windows 10/Linux

DASHBOARD EXAMPLE

TEMPERATURE



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