Getting Started Guide

System

ALERT205

ALERT2 Transmitter

Revision: 12/2024

RELIABLE MONITORING SINCE 1974

Campbell SCIENTIFIC®

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1. Introduction

The ALERT205 is an ALERT2 transmitter with several communications and package options that allow it to fit the needs of your application. Package options are canister, enclosure, and backplate—offering a variety of compatible installation methods. In addition, the reliable ALERT205 can measure nearly any sensor on the market and provide accurate, defensible data necessary for making critical, time-sensitive decisions.

To configure and deploy the ALERT205, use the easy-to-use, mobile-friendly, browser-based interface that is hosted by the transmitter. View the data in real time on the interface **Dashboard** and view, graph, and collect historical data from the **Monitor Data** page. View the interface using a computer or mobile device web browser using USB, Wi-Fi, or cellular, which eliminates the need for computer-based software.

> **NOTE:**
> The use of cellular or Wi-Fi requires optional hardware that must be specified when ordering.

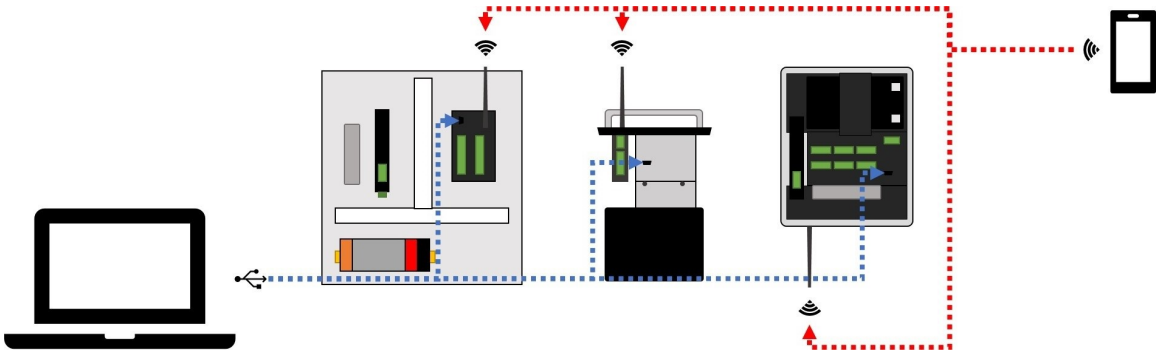


Figure 1-1. ALERT205 packaged on a backplate, in a canister, and in an enclosure

2. Connect to the ALERT205

Watch the video: ALERT205 Part 1, Introduction.

1. For the initial configuration, connect the ALERT205 to a computer USB port using the provided cable. The ALERT205 can also connect remotely to a computer by using cellular or Wi-Fi.

   > **NOTE:**
   > When connecting to the ALERT205 with a USB cable for the first time, the computer may ask if the computer should be discoverable by other computers on the network. Select **No** to continue.

   > **TIP:**
   > To use the ALERT205 system remotely (over a cellular or Wi-Fi connection), set up an account with **Administrator** privileges (see Set up user accounts (p. 11)).

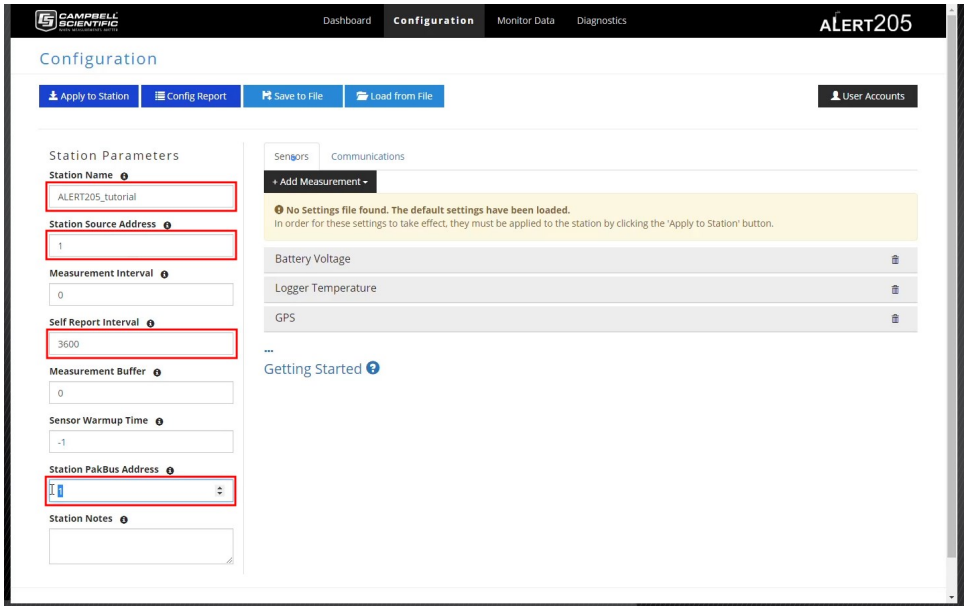
2. Open a web browser and type **192.168.66.1** or linktodevice.com if using a USB connection. Type **192.168.67.1** if using a remote connection.
3. Once connected to the system with a web browser, navigate to the **Configuration** page to configure Station parameters (p. 3), Add sensors (p. 4), and set up Communications options (p. 7). To view the help in context for each parameter, click .

3. Configuration

Watch the video: ALERT205 Part 2, Configuration.

3.1 Station parameters

The **Station Parameters** apply to the whole station, not to a specific measurement or communications device.



1. Click **Configuration**.
2. Type a descriptive ALERT205 **Station Name**.
3. Type a **Station Source Address**. Every station in the ALERT2 network must have a unique source address.
4. Type a **Self Report Interval** (in seconds). The station will report to the home station at this interval to indicate that the station is functioning during sunny conditions. Click the ℹ icon for a list of common intervals.
5. Type a **PakBus Address**. Every station in the ALERT2 network must have a unique PakBus address (1 to 3999).

3.2 Add sensors

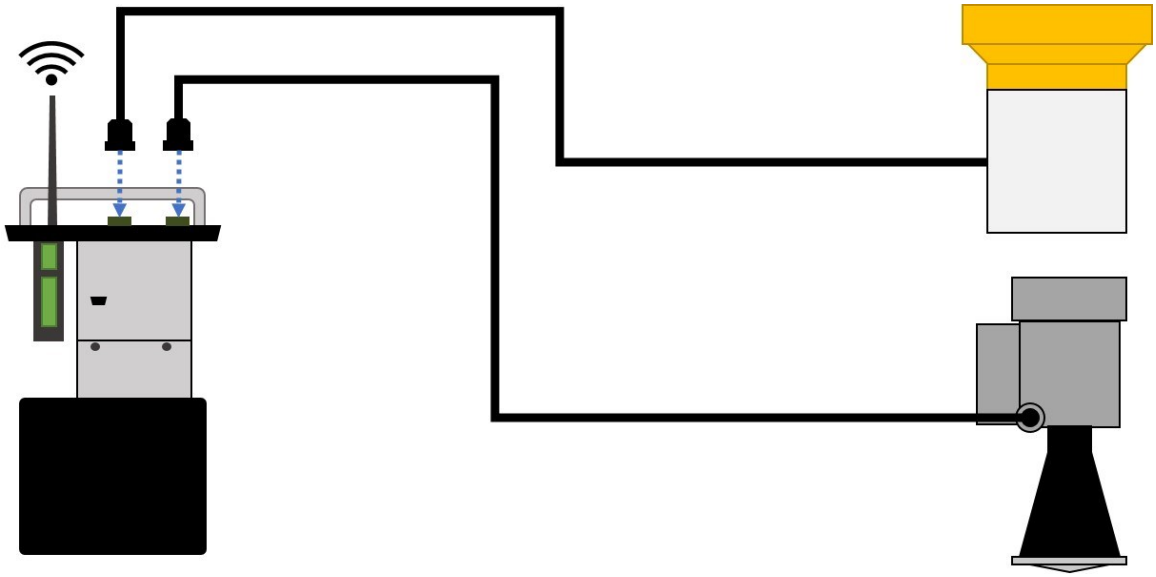
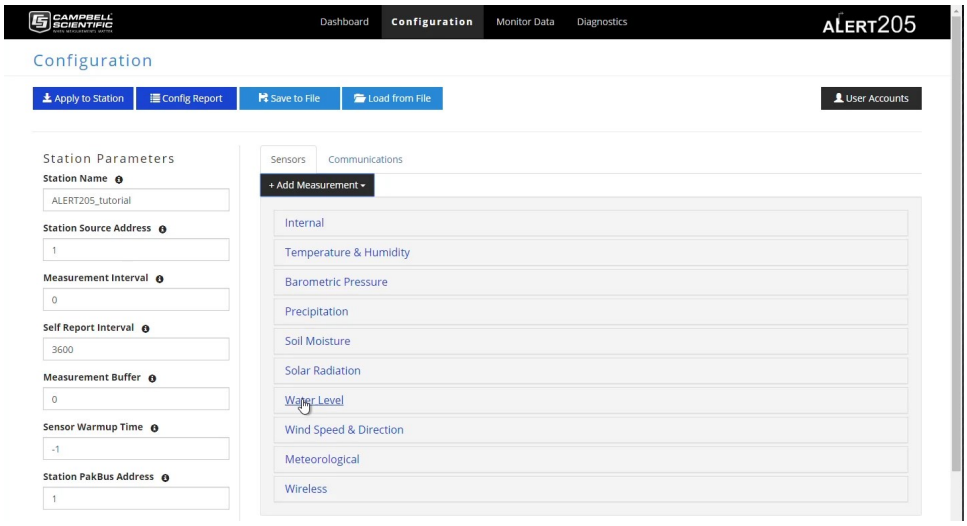


Figure 3-1. Precipitation and water level sensors connected to an ALERT205 canister

To customize the system to read sensors, follow these steps:

1. Click + Add Measurement to see a list of available sensors.



2. Add analog sensors and up to ten SDI-12 sensors including **Temperature & Humidity**, **Barometric Pressure**, **Precipitation**, **Soil Moisture**, **Solar Radiation**, **Water Level**, **Wind Speed & Direction**, and **Meteorological**. Available internal measurements include **Battery Voltage**, **Logger Temperature**, **GPS**, and **Enclosure Humidity** (canister package option only).

   > **NOTE:**
   > A warning will appear if two sensors have the same SDI-12 address. See step 3 for information about changing SDI-12 addresses.

3. After selecting a sensor, it will appear in the list with various parameters to configure the sensor for different applications. Click on the sensor name to expand its available settings.

   a. Some parameters apply to the sensor in general such as the **SDI-12 address** (for SDI-12 sensors) and **Dashboard Label**. The **Dashboard Label** name must be descriptive enough that you can distinguish the sensor from other sensors of the same type on the dashboard.

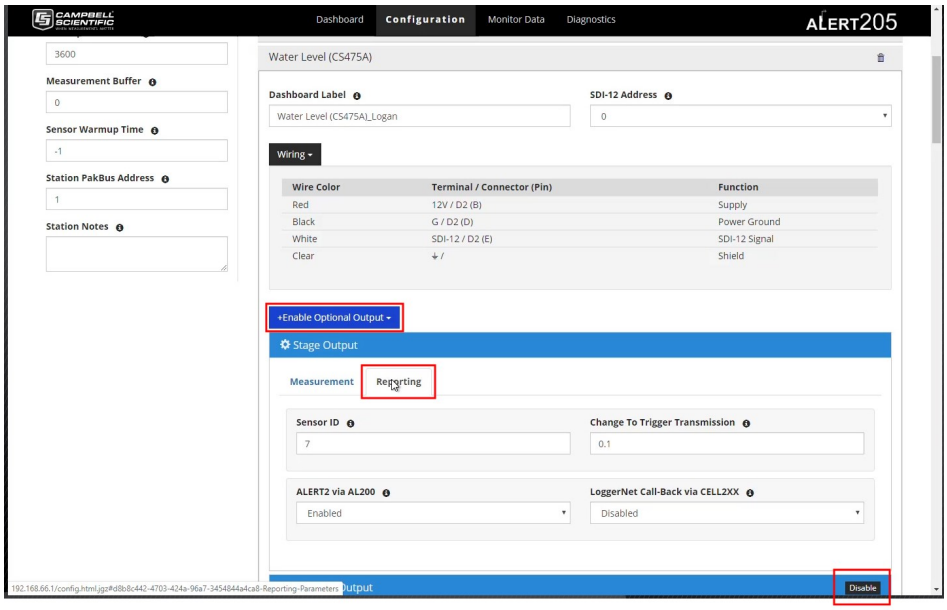
      > **NOTE:**
      > Each sensor must have a unique SDI-12 address.

   b. Each sensor has one or more outputs such as **Temperature**, **Humidity**, **Stage**, **Pressure**, and **Voltage**.

4. View the wiring diagram for the sensor by clicking 

.

5. Click + Enable Optional Output to see the available optional outputs. This button only is displayed if optional outputs are available for the sensor. Click **Disable** on the right side of an output panel header to disable that option.



6. For each optional output option, click the **Reporting** tab to set up the conditions that will trigger an event transmission.
    a. Type the **Sensor ID**, which is used to identify this measurement in the ALERT2 transmissions. Each measurement value must have a unique **Sensor ID**. Click the ℹ icon for the recommended ID numbers.
    b. Type the **Change to Trigger Transmission** value. When the difference between the current measurement and previous measurement is greater than or equal to the **Change to Trigger Transmission** value, an event transmission is triggered.
    c. Enable **ALERT2 via AL200** to generate an AL200 report when the trigger condition is met.
    d. Enable **LoggerNet Call-Back via CELL2XX** for an optional output to initiate ***LoggerNet*** call-back when the trigger condition is met.
7. Remove a sensor from the running configuration by clicking the trash can on the right side of the sensor heading.
8. To reorder the sensors, drag them up or down in the list. This determines the order the system will measure the sensors. Also, if measuring multiple sensors of the same type (for example, **Water Level**, **Wind**), it determines the order those sensors are displayed on the **Dashboard**.

9. After adding and configuring all sensors, click Apply to Station, then configure the communications options according to the following section.

3.3 Communications options

Communications hardware options are specified at order time. Configure the AL200 to communicate with the communications devices in your ALERT2 network. Other available devices are CELL2XX, Wi-Fi Access Point, and RF407.

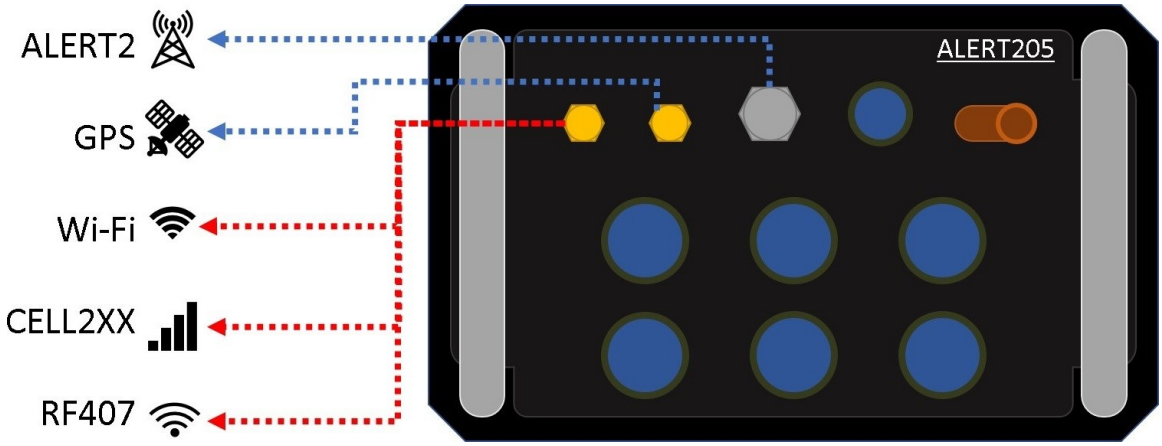
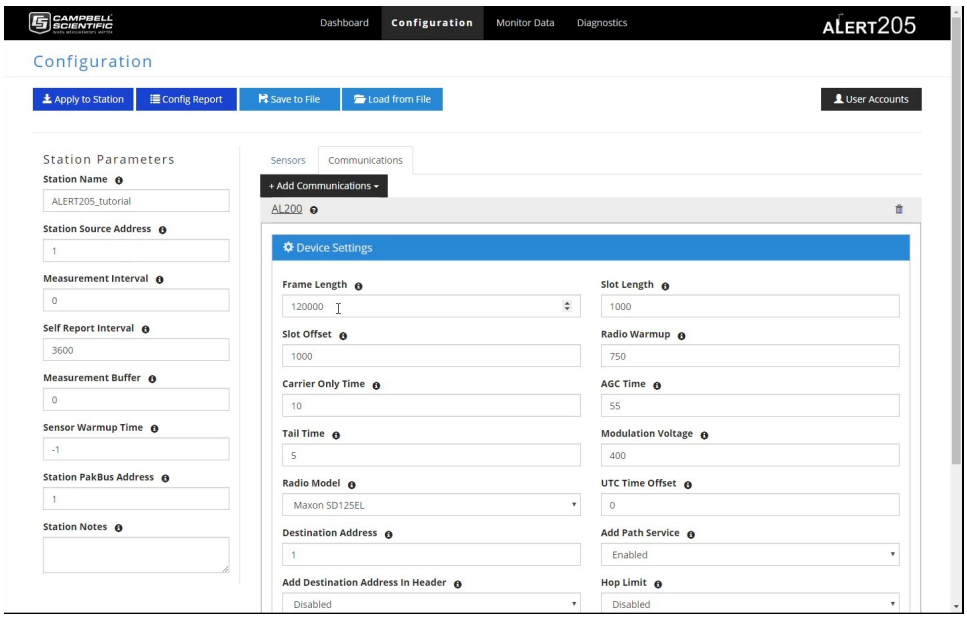


Figure 3-2. Antenna connectors on the ALERT205 canister

To add communications devices and to customize the system communications hardware, follow these steps:

1. Click the Communications tab.
2. Click + Add Communications to see a list of available devices.

3. Select the devices used in your system. After selecting a communications device, it will appear in the list with the parameters used to customize the device for your application.



4. Configure each communications device:

   a. **AL200 (standard hardware)**

      This device is added by default to the system configuration. The AL200 is an ALERT2 encoder and modulator that transmits on an ALERT2 network. It can also achieve clock synchronization by using GPS.

      Specify the **Frame Length**, **Slot Length**, **Offset** and other settings.

      For more information on the AL200 settings, click the ℹ icons for help.

   b. **CELL2XX (hardware option)**

      Select the CELL2XX if your system has a CELL200-series modem. The CELL2XX can use ***LoggerNet*** (***LoggerNet*** call-back) or other TCP communications such as a web browser to view the **Dashboard** or other pages.

      Specify the **APN** and other cellular settings. If ***LoggerNet*** call-back is desired, click the **LoggerNet Call-back** tab and specify the **LoggerNet Call-Back IP Address** and other settings.

      For more information on the CELL2XX settings, click the ℹ icons for help.

c. **Wi-Fi Access Point (hardware option)**

   If the system is Wi-Fi capable, select the **Wi-Fi Access Point** to allow another Wi-Fi enabled device, such as a smart-phone, to access the **Dashboard**.

   Specify the **Network Name**, **Password**, and other Wi-Fi settings.

   For more information on the **Wi-Fi Access Point** settings, click the ⓘ icons for help.

d. **RF407 (hardware option)**

   Select **RF407** if your system has an RF407 radio. This enables the system to communicate with and read values from a Campbell Scientific data logger configured with an RF407. The RF407 is used in conjunction with the sensor **CSI Datalogger** that is under the **Wireless** category. For each **CSI Datalogger** sensor, add an RF407 and configure its settings to match those radio network.

   Specify the **Network ID** and **Hop Sequence**.

   For more information on the RF407 settings, click the ⓘ icons for help.

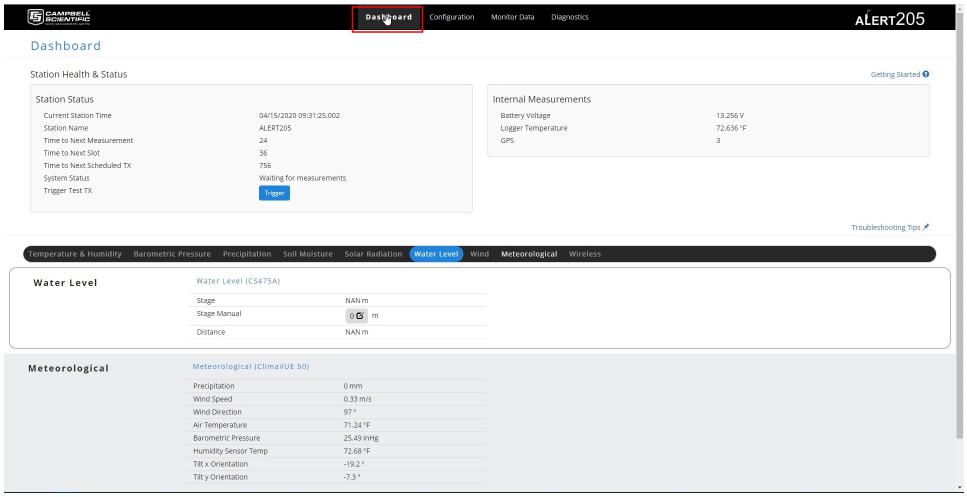
5. After adding and configuring communications options, click Apply to Station to save the communications configuration to the station. Click Save to File to keep a copy of the configuration. It can then be loaded to this or another station by clicking Load from File.

4. Dashboard and data monitoring/retrieval

Watch the video: ALERT205 Part 3, Dashboard.

4.1 Dashboard

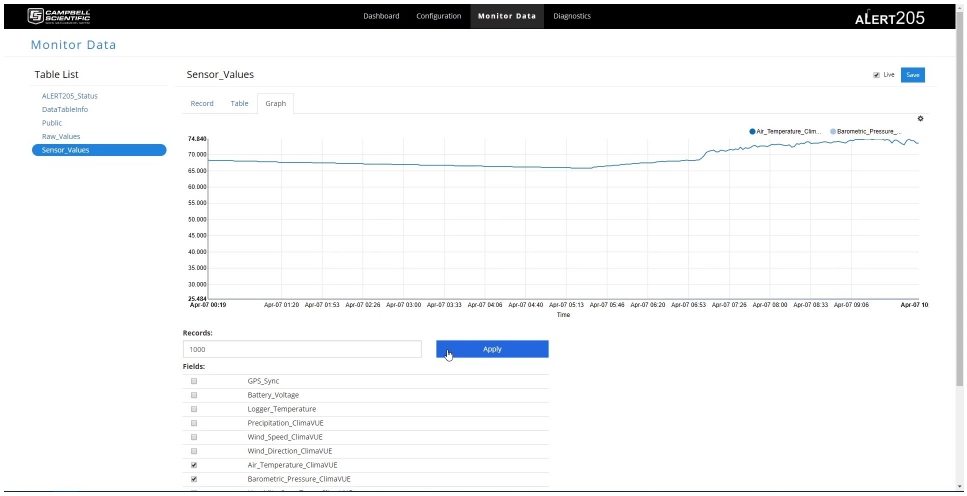
After configuring the measurements and communications, visit the ALERT205 **Dashboard** to verify their settings. The **Dashboard** displays current station status, internal measurements, and the current value for each configured measurement. The **Dashboard** also supports tasks such as triggering a test transmission, entering manual stage values, and adjusting precipitation accumulations.



4.2 Monitor

1. Select **Monitor Data** to display real-time and historical data and save the data on a computer.
2. Select the values to display from the **Table List**.
3. Click the **Record** tab to display the real-time values for each field in the table.

4. Click the **Table** tab to display a table of historical data. Type the number of **Records** to display, select the fields to plot, then click **Apply**. Use the scroll bars to move through the data to see all records. The table updates as new records are received.
5. Click the **Graph** tab to display the data as a graph. Type the number of **Records** to display, select the fields to plot, then click **Apply**.



6. To download data or table to a computer, click **Save**, select the file format, and apply filters. The file is saved to the C:/Downloads directory on your computer.

5. Set up user accounts

Set up user accounts to control who can remotely access the system. To remotely configure the system, set up a user account with **Administrator permission level**.

To manage user accounts, click User Accounts on the **Configuration** page to access the **User Account Setup** dialog. The computer must be connected over USB or logged in under a previously created account with administrator access. The following table explains the permission levels.

Table 5-1: User account permissions

Permission level	Access
None	Disable an account without deleting it
Read Only	Permission to view the system values
Administrator	Permission to view the system values, to edit the system configuration, and to create and edit accounts

NOTE:
Creating an account with the user name **anonymous**, without a password, will allow the specified access to anyone that connects to the system without having to enter a user name. A default **anonymous** account exists with read-only access. This allows anyone to see the **Dashboard** and the **Monitor Data** pages without having to enter a user name.

NOTE:
The **anonymous** account without password must exist to properly access the system using the Apple Safari browser.

6. Diagnostics

Watch the video: ALERT205 Part 4, Diagnostics.

The **Diagnostic** tab provides tools for displaying current status information, updating the ALERT205 operating system, and accessing watch modes used for troubleshooting or entering SDI-12 commands.

Status information

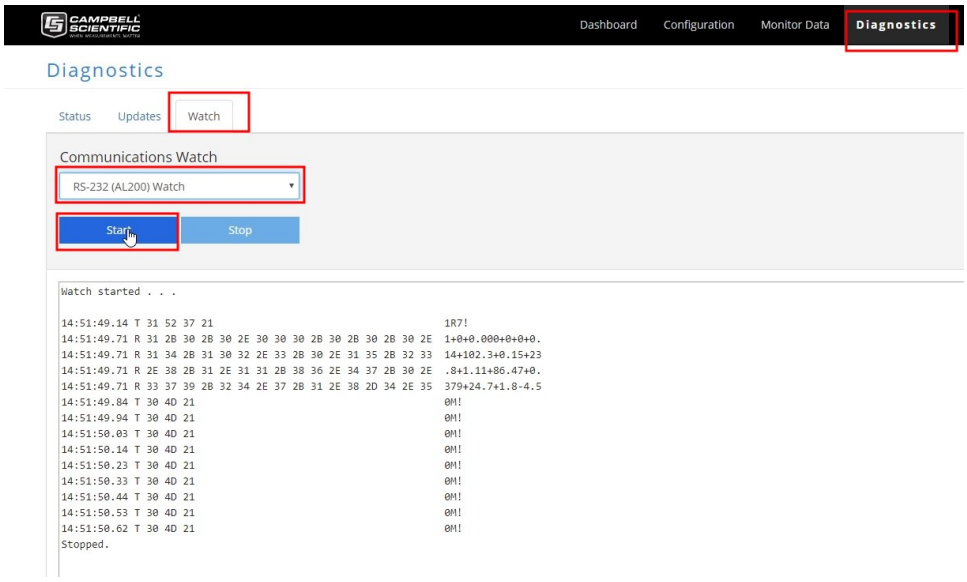
1. Click **Diagnostics**.
2. Click **Status**. The current status of parameters such as the operating system version or lithium battery voltage are displayed.

Updating the operating system

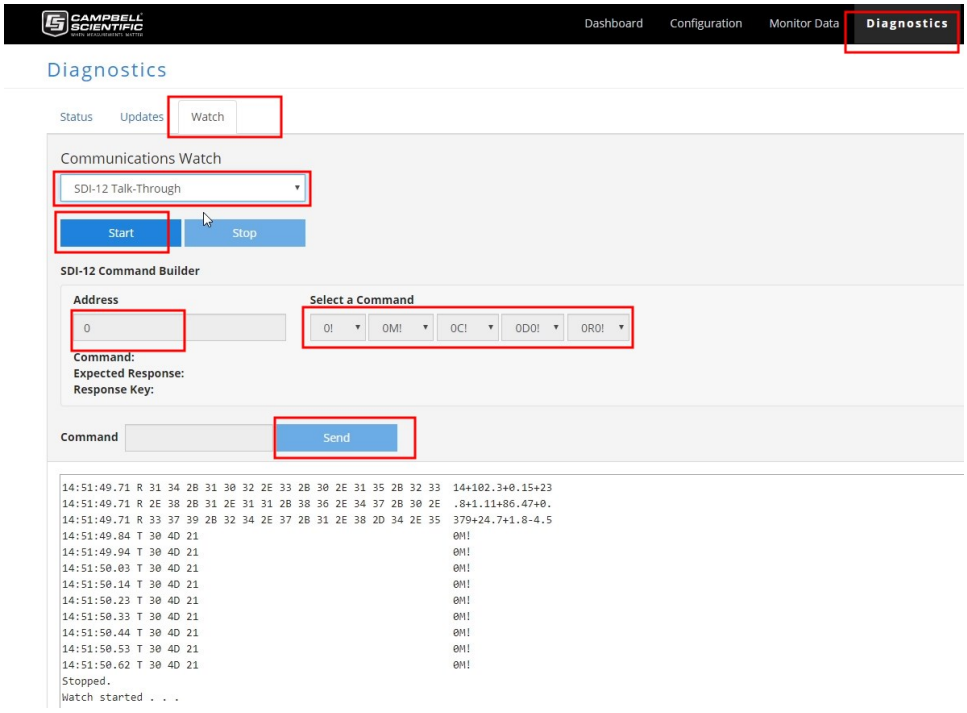
1. Go to www.campbellsci.com/downloads/al200-alert2-os and click **Download Now**.
2. Click **Save File** then click **OK**. This will download the file on your computer, typically in the C:/Downloads folder.
3. Connect to the ALERT205 either directly with a USB cable or remotely through a Wi-Fi connection.
4. Select **Diagnostics** > **Updates** > **Update from file**.
5. Navigate to the folder containing the file. Select the file and click **Open**.
6. Follow the onscreen prompts to finish downloading the new operating system to the ALERT205.

Communications watch modes

1. Click **Diagnostics**
2. Click **Watch**
3. Use the drop-down menu to select a watch mode option and click **Start** to begin watching the selected mode.
    a. **SDI-12 Watch** option displays SDI-12 commands and data sent between the ALERT205 and SDI-12 sensors. It is used for troubleshooting communications with SDI-12 sensors.
    b. **RS-232 (AL200)** Watch option shows communications between the ALERT205 and AL200 modem. This is useful for troubleshooting the AL200 modem.



c. **SDI-12 Talk-Through Watch** option opens a terminal for sending SDI-12 commands to an attached SDI-12 sensor.



i. Type the sensor address, choose the command from the drop-down menu, and click **Send**. The results of the command will appear in the terminal window.

ii. Alternatively, type the SDI-12 command directly into the terminal window. Refer to the sensor manual for a list of SDI-12 commands available for the sensor.

4. Click **Stop** to end and switch to a different diagnostic mode or return to the **Dashboard** or **Monitor Data** screens.

7. Canister option connectors

The following table provides the standard military-style connectors that will mate with the connectors on an ALERT205 canister. This is to assist with using existing sensors with an ALERT205. As a service, Campbell Scientific can wire appropriate connectors onto many compatible sensors. Contact Campbell Scientific sales for further information about the service.

Pin function of the connectors is provided in the configuration interface of the ALERT205.

Table 7-1: Connectors	
Connector label	Standard mating connector
Power	97-3106A-10SL-3S
A1	97-3106A-14S-2S-X (Rotated by the manufacturer 120 degrees)
A2	97-3106A-14S-2S
A3	97-3106A-14S-6S (Must remove insert and rotate 90 degrees)
A4	97-3106A-14S-6S
D1	97-3106A-14S-5S
D2	97-3106A-14S-5S-X (Rotated by the manufacturer 110 degrees)

8. More information

For more information, contact Campbell Scientific.

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