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As a SensoScientific data logger user, you will have the ability to monitor your facility’s fridge/freezer temperatures via the Senso Cloud Portal.

Temperatures are transmitted via Wi-Fi to the Seno cloud portal every 15-20 minutes.

With access to the Senso Cloud Portal, you can access reports, view Min/Max temperatures, and report out of range temperatures.

We will go over all alarm types within Senso (Data, Signal, & Battery). All alarms showing in red need immediate attention. Action taken will depend on the type of alarm received.

All staff should be trained on what steps should be taken in the event of a temperature excursion and know how to enact your clinics Emergency Response Plan. We will cover this in more detail later on.
It is best to condition the Senso Probe, by placing it in your unit(s) to get to temperature, prior to installing.

The Senso Probe is monitoring temperatures.

The Senso Probe must be replaced annually, when the Certificate of Calibration expires.

Know the difference:

**Senso Node**

*(Color of node may vary)*

The Senso Node displays the temperatures of your unit(s).

The display will show for approximately 30 seconds then go into sleep mode.

To view the current temperature, press the right arrow button. We will discuss this into more detail.

**Senso Probe**

It is best to condition the Senso Probe, by placing it in your unit(s) to get to temperature, prior to installing.

The Senso Probe is monitoring temperatures.

The Senso Probe must be replaced annually, when the Certificate of Calibration expires.

**Glycol Bottle**

The Glycol Bottle is filled with glycol.

The glycol liquid provides a buffer for the Senso Probe and more accurate temperatures.

When replacing the probe, glycol may spill.
Familiarize yourself with the Senso Node

Current and MIN/MAX temperatures are displayed. The display will show for approximately 30 seconds when recording then goes into sleep mode.

View the current daily temperature by clicking the Right Arrow button.

Once daily temperatures are viewed and recorded, click the Up Arrow button. This will refresh (resets) the MIN/MAX temperatures.

Other features are available, we will discuss those later. The Right and Up Arrow buttons are your primary buttons.
Introduction to Senso Cloud Portal and the Senso Home Page

Log in to Senso with your username and password.  
https://cloud.sensoscientific.com

While on the Current Status screen, you can check the status of your units and navigate to different reports.
Documenting Temperatures

There are two ways to view and monitor your temperatures. Choose one way to take temperatures that works best for your facility.

**Option 1:**

Manually verify current and Min/Max temperatures by pressing the up arrow on the Senso Node.

If you take temperatures by using this method, you must press the up arrow button to reset the Min/Max temperatures daily.

**Option 2:**

Log into Senso and verify the current and Min/Max temperatures by viewing the Monthly Report.

All temperatures are documented on the Manual Temperature Log. Any out of range temperatures must be documented and action taken.

These two options will be shown in detail.
Option 1:
Review and record temperatures from the Senso Node

Note: If the Min/Max are outside of the recommended in range temperatures, excursion protocols must be completed.

1. Press the Right Arrow Button
   Document the Current and Min/Max temperatures on the Manual Temperature paper log.

2. Wait for the screen to go back into sleep mode (the screen will go black), then press the Up Arrow Button.
   The Up Arrow Button resets the Min/Max temperatures. All three temperatures will be the same. Doing this will ensure the correct Min/Max temperatures are reported daily.
Option 2:
Review and record temperatures from within Senso

1. Log in to the Senso portal with your username and password. Each user has their own user name and password. If you do not have access, please contact your system administrator.

2. Once logged into Senso you will be directed to the Current Status Page. This is also known as the Senso Home Page. *(Reference image 1, page 5)*

3. Select Reports

4. Select Monthly Reports

5. Select the Nodes. We recommend selecting “All Nodes”.

6. Enter the Start Date: this is the date that temperatures were last document/recorded in your facility.
7. Review the Min/Max temperatures to ensure that the unit has not experienced a temperature excursion.

8. Record the current time, name initials of staff viewing temperatures, Minimum and Maximum temperatures on the Manual Temperature Log. *(Reference example 1, page 7)*

Note: If the Min/Max are outside recommended in range temperatures, excursion protocols must be completed.

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Type</th>
<th>Temperature °C</th>
<th>Min</th>
<th>Avg</th>
<th>Max</th>
<th>From</th>
<th>To</th>
<th>BCP rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>UDOH Thermo 4</td>
<td>Fridge</td>
<td>Temperature °C</td>
<td>4.6</td>
<td>4.8</td>
<td>5.0</td>
<td>9/9/2018 12:00:20 AM</td>
<td>9/9/2018 11:53:42 PM</td>
<td>97</td>
<td></td>
</tr>
<tr>
<td>UDOH Thermo 4</td>
<td>Fridge</td>
<td>Temperature °C</td>
<td>4.6</td>
<td>4.8</td>
<td>5.0</td>
<td>9/8/2018 12:06:50 AM</td>
<td>9/8/2018 11:45:14 PM</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>UDOH Thermo 4</td>
<td>Fridge</td>
<td>Temperature °C</td>
<td>4.6</td>
<td>4.8</td>
<td>4.9</td>
<td>9/7/2018 12:08:14 AM</td>
<td>9/7/2018 11:51:48 PM</td>
<td>95</td>
<td></td>
</tr>
</tbody>
</table>
# Documenting Temperatures

As of January 1, 2018, temperatures are required documented on the Manual Temperature paper log.

Temperature logs, for Celsius and Fahrenheit, can be located on our website. **Temperatures must be visually inspected and documented once daily, at the beginning of business hours.**

To avoid delays in processing vaccine orders, make sure to include:

- Reason you are sending your temperature log
- Month/Year
- Facility Name
- The Unit Name
- VFC Pin/USIIS ID
- Staff name initials
- Min & Max temperatures
- Note days your clinic is closed/observed a holiday

*Out-of-range temperatures required additional information. Documentation for all out-of-range temperatures must be submitted with the temperature log for vaccine orders.*

---

### Celsius (°C) Temperature Log

**FOR VFC ORDER**

<table>
<thead>
<tr>
<th>MONTH/YEAR:</th>
<th>September-18</th>
</tr>
</thead>
</table>

---

**FACILITY NAME:**

**UNIT:**

**THERMO 4**

**VFC PIN/USIIS ID:**

**P-9998 / OSP097**

---

**ANY TEMPERATURES OUTSIDE MANUFACTURER RANGE MUST BE ADDRESSED AND REPORTED.**

Please submit Action Documentation with Temperature Logs.

---

<table>
<thead>
<tr>
<th>Day of Month</th>
<th>Time</th>
<th>Staff Initials</th>
<th>Temp Range: 2.0 - 8.0°C</th>
<th>In Range?</th>
<th>Temp Range: ≤-15.0°C</th>
<th>In Range?</th>
<th>Action Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>Y / N</td>
<td></td>
<td>Y / N</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>Y / N</td>
<td></td>
<td>Y / N</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>10:45</td>
<td>JO</td>
<td>3.0</td>
<td>8.0</td>
<td>Y / N</td>
<td>Y / N</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>8:45</td>
<td>JO</td>
<td>4.5</td>
<td>6.7</td>
<td>Y / N</td>
<td>Y / N</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>8:45</td>
<td>JO</td>
<td>4.5</td>
<td>6.7</td>
<td>Y / N</td>
<td>Y / N</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>8:17</td>
<td>KT</td>
<td>4.6</td>
<td>5.0</td>
<td>Y / N</td>
<td>Y / N</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>9:42</td>
<td>KD</td>
<td>4.6</td>
<td>4.9</td>
<td>Y / N</td>
<td>Y / N</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td>Y / N</td>
<td></td>
<td>Y / N</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td>Y / N</td>
<td></td>
<td>Y / N</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>8:45</td>
<td>KT</td>
<td>4.6</td>
<td>5.0</td>
<td>Y / N</td>
<td>Y / N</td>
<td></td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Day of Month</th>
<th>Time</th>
<th>Staff Initials</th>
<th>Temp Range: 2.0 - 8.0°C</th>
<th>In Range?</th>
<th>Temp Range: ≤-15.0°C</th>
<th>In Range?</th>
<th>Action Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>Y / N</td>
<td></td>
<td>Y / N</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>Y / N</td>
<td></td>
<td>Y / N</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>Y / N</td>
<td></td>
<td>Y / N</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>Y / N</td>
<td></td>
<td>Y / N</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td>Y / N</td>
<td></td>
<td>Y / N</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
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<td></td>
<td>Y / N</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td>Y / N</td>
<td></td>
<td>Y / N</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td>Y / N</td>
<td></td>
<td>Y / N</td>
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<td>Y / N</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td>Y / N</td>
<td></td>
<td>Y / N</td>
<td></td>
</tr>
</tbody>
</table>

---

**OUT OF RANGE TEMPS:**

1. Store the vaccine under proper conditions according to Vaccine Management Plan, as quickly as possible and label "Do Not Use."

2. Calculate time vaccine was out of range from the last recorded in range temperature (all the temperatures went out of range).* Identify worst case scenario. See Emergency Response Worksheet for additional information.

---

**EX: Example**

---

Utah Dept of Health
**Senso Alarms**

There are three alarms: Data (Temperature), Signal, and Battery. All **red** alarms require action in Senso. Never leave a **red** alarm in alarmed status.

Temperature alarms, also come as a Data alarm, notifies staff that your unit(s) are out of range for more than 10 minutes.

Immediate action must be taken to ensure the viability of the vaccine.

You can time stamp temperatures within Senso by pressing the OK button.

This will be a great tool to use in the event of an excursion. It will document the exact time the excursion occurred and the duration.

*Signal alarm notifies staff that the Wi-Fi connection is down. Once the connection is re-established, temperature data will be transmitted. As a last resort, you may need to turn the power off/on to re-establish the Wi-Fi connection. Doing this will result in the stored temperature data to be deleted.

*Battery alarm notifies staff that the battery is low and needs to be replaced. When you or your staff receives this alarm, notify the Immunization Program for a replacement battery.

Senso requires four **AA 3.6 Lithium Thionyl Chloride** batteries. Use of any other AA battery will damage the device and may be at the expense of the facility.

*Signal and Battery alarm notifications received during non-business hours does not require immediate action. Action can be taken when you return to the office during business hours.
**Senso Temperature (Data) Alarm**

When a temperature alarm is received, it may come across as a data alarm. This alarm is notifying you that you have a unit with out-of-range temperatures. **Immediate action must be taken.**

An email containing the Graph report will show the temperature excursion. All staff should know what to do in the event of an emergency and how to enact your facilities [Emergency Response Plan](#).

Once your unit has gone back into range or the issue has been corrected, document the action taken. You will need to confirm the alarm within Senso to return the node to green status.

In the event of a temperature excursion, run the Advance Report within Senso for the period in question. This report will help pinpoint the length of time your vaccine was exposed to out of range temperatures.

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Type</th>
<th>Unit</th>
<th>Value</th>
<th>Date/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>UDOH ABS</td>
<td>Freezer</td>
<td>Temperature</td>
<td>°C</td>
<td>-23.2</td>
<td>PM 8/14/2018 5:27:28</td>
</tr>
<tr>
<td>UDOH ABS</td>
<td>Freezer</td>
<td>Temperature</td>
<td>°C</td>
<td>-22.3</td>
<td>PM 8/14/2018 5:12:25</td>
</tr>
<tr>
<td>UDOH ABS</td>
<td>Freezer</td>
<td>Temperature</td>
<td>°C</td>
<td>-19.9</td>
<td>PM 8/14/2018 4:57:19</td>
</tr>
<tr>
<td>UDOH ABS</td>
<td>Freezer</td>
<td>Temperature</td>
<td>°C</td>
<td>14.0</td>
<td>PM 8/14/2018 4:42:14</td>
</tr>
<tr>
<td>UDOH ABS</td>
<td>Freezer</td>
<td>Temperature</td>
<td>°C</td>
<td>4.0</td>
<td>PM 8/14/2018 4:27:11</td>
</tr>
<tr>
<td>UDOH ABS</td>
<td>Freezer</td>
<td>Temperature</td>
<td>°C</td>
<td>6.4</td>
<td>PM 8/14/2018 4:12:08</td>
</tr>
<tr>
<td>UDOH ABS</td>
<td>Freezer</td>
<td>Temperature</td>
<td>°C</td>
<td>12.6</td>
<td>PM 8/14/2018 3:57:05</td>
</tr>
<tr>
<td>UDOH ABS</td>
<td>Freezer</td>
<td>Temperature</td>
<td>°C</td>
<td>6.6</td>
<td>PM 8/14/2018 3:42:00</td>
</tr>
<tr>
<td>UDOH ABS</td>
<td>Freezer</td>
<td>Temperature</td>
<td>°C</td>
<td>11.3</td>
<td>PM 8/14/2018 3:26:54</td>
</tr>
<tr>
<td>UDOH ABS</td>
<td>Freezer</td>
<td>Temperature</td>
<td>°C</td>
<td>6.4</td>
<td>PM 8/14/2018 3:11:50</td>
</tr>
<tr>
<td>UDOH ABS</td>
<td>Freezer</td>
<td>Temperature</td>
<td>°C</td>
<td>5.1</td>
<td>PM 8/14/2018 2:56:47</td>
</tr>
<tr>
<td>UDOH ABS</td>
<td>Freezer</td>
<td>Temperature</td>
<td>°C</td>
<td>3.2</td>
<td>PM 8/14/2018 2:41:40</td>
</tr>
<tr>
<td>UDOH ABS</td>
<td>Freezer</td>
<td>Temperature</td>
<td>°C</td>
<td>11.1</td>
<td>PM 8/14/2018 2:26:30</td>
</tr>
<tr>
<td>UDOH ABS</td>
<td>Freezer</td>
<td>Temperature</td>
<td>°C</td>
<td>20.2</td>
<td>PM 8/14/2018 2:11:27</td>
</tr>
<tr>
<td>UDOH ABS</td>
<td>Freezer</td>
<td>Temperature</td>
<td>°C</td>
<td>-24.2</td>
<td>PM 8/14/2018 1:56:23</td>
</tr>
</tbody>
</table>

Green highlighted show the in-range temperatures, date, and time.

The orange highlighted section shows out-of-range temperatures, date, and time.

In this example: The in-range temp before the excursion was 2:26 PM. The next in-range temp was at 4:57 PM. Calculate the time between in-range to in-range. The vaccines were in out of range temps for a total 2 hours 31 minutes.
Document all information on the Troubleshoot Record. Provide as much information as possible to avoid delays in processing vaccine order.

<table>
<thead>
<tr>
<th>Facility Name:</th>
<th>VFC Pin/USIBS ID:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date &amp; Time of Event</td>
<td>Unit Information</td>
</tr>
<tr>
<td>Date:</td>
<td>Time:</td>
</tr>
</tbody>
</table>

**Description of Event:**
- General description (i.e., what happened?)
- Estimated length of time between event and test documented reading of storage temperature in acceptable range (30°F to 40°F [2°C to 4°C] for refrigerator, 0°F to 5°F [-18°C to -18°C] for freezer)
- Inventory of affected vaccines, including (1) lot list and (2) whether purchased with public (for example, VFC) or private funds (Use separate sheet if needed, but maintain the inventory with this troubleshooting record)
- Prior to this event, have there been any storage problems with this unit and/or with the affected vaccine?
- Include any other information you feel might be relevant to understanding the event.

**Action Taken:**
- Document thoroughly. This information is critical to determining whether the vaccine might still be usable.
- Can discuss with Utah Immunization Program and/or the manufacturer(s).
- IMPORTANT: What did you do to prevent a similar problem from occurring in the future?

**Results:**
- What happened to the vaccine? Was it able to be used? If not, was it returned to the distributor? (Note: For public purchase vaccine, complete Return & Transfer Form for accountability.)

A false temperature alarm, also referred to as temperature spike, may occur. The Graph report will show the temperature in range, went immediately out of range, then right back into range. For this alarm, you simply need to confirm and document it was a temperature spike.
**Senso Signal Alarm**

A signal alarm is notifying you that the Wi-Fi connection has been lost.

The node will try and connect to the Wi-Fi to transmit the stored data for two hours, if the connection is still down after this time, you will receive an alarm. Once the Wi-Fi connection is re-established, press the OK button to transmit any stored data. You will then need to confirm the alarm in Senso to avoid multiple alarm notifications.

A signal alarm received after normal business hours does not require immediate attention. You can address the issue when you are back in the office.

If the Wi-Fi connects before you receive an alarm, you will not receive an alarm and no additional action is required.

1. Press the **OK** button to re-establish the Wi-Fi connection.

Please Note: As a last resort, you may need to power off/on the node to re-establish the connection. Doing this will result in all stored data not transmitted, to be deleted.

**Please Note:** You may need to power off/on the Senso node to re-establish the Wi-Fi connection. Turning the Senso node off should be done as last resort. Powering off/on the Senso node will delete any stored temperature data not transmitted. Once the temperature data is deleted, it cannot be restored.
Senso Battery Alarm

A battery alarm is notifying you that the battery level is below 5%. At that time, contact the Immunization Program or the Vaccine Management Team and request new batteries.

Pressing the OK button frequently may result in a false battery reading.

A signal alarm received after normal business hours does not require immediate attention. You can address the issue when you are back in the office.

The Senso Node requires a very specific battery. It requires **four AA 3.6V Lithium Thionyl Chloride** batteries. Use of any other AA battery can result in damage to the device and may be at your clinics expense.

You can be proactive in checking the status of your battery by logging into Senso and viewing the Battery Status Report. Click the sub tab Battery Status and you are able to view the battery life.
Confirming Alarms in Senso

Once an alarm has been triggered within Senso, you must take action. You must take action even if your unit goes back into range, the Wi-Fi is reconnected, or you replace the battery.

All alarms must be confirmed once the issue has been identified and corrected.

If the alarm is confirmed, and you are still experiencing issues, you will receive another alarm.

How to confirm the alarm in Senso:

1. If you are not logged into Senso, log into Senso.
2. While on the “Monitoring” tab, you will see nodes in alarm state those are in **RED**. Click “Alarmed” in the Alarm Status column for the appropriate node.

   Please note: you may need to repeat this step for multiple alarms.

3. On the “View Alarm” page, click Take Action

![](image)

4. On the Diagnose Alarm Page, Select the “**Root Cause**” from the drop down box. There are a few options, choose the one that best describes your alarm.
5. Enter the action taken in the **Corrective Action box**. This will be a description of the incident, for example, “the batteries were replaced”, “the door was found ajar and closed”, “adjustments were made to the unit settings”, or “unit recently restocked”. Please remember that in the event of a temperature alarm, provide as much information as you can.

6. Once you have verified the equipment is working properly, click confirm. This will move you out of alarmed state and back to green. If you are still experiencing issues, you will receive another alarm.

7. If your equipment has failed, you cannot re-establish the Wi-Fi connection, or are still experiencing other issues you can suspend your alarm. Mark that the equipment is not working properly, choose the length of time to suspend the alarm and click ‘Confirm’. You will receive another alarm once the time lapses.

   **When alarms are suspended, the Red status on the Current Status screen will update to Pink and will re-alarm after the time elapses. If the problem is fixed before re-alarm, action is still required within Senso to clear the alarm.**

8. Once corrections have been made, and/or the equipment is operating within normal ranges, repeat steps to confirm your alarm.
Useful Links

**VFC Forms:** Training, Provider & Eligibility Forms, VFC Educational Material, Report Forms, Storage & Handling Forms, Tally Sheets, and more. The website is updated to keep required information current.

**Vaccine Storage & Handling Toolkit:** View/Print the current Vaccine Storage and Handling Toolkit [Jan 2018] from CDCs website.

**USIIS Portal:** Login to the USIIS portal to gain access to USIIS Immunize, Vaccine Inventory, Doses Administered Reporting, VOMS, Clinic Reports & Batch Processes, and more.

**SensoScientific Login Portal:** Log in to view temperatures, run reports, and confirm alarms.

**Please note – If sites are bookmarked in your web browser, they may need to be refreshed/updated to reflect the most current information.**

QUESTIONS?

For additional assistance, please contact the Vaccine Management Team.

vacteam@utah.gov
(801) 538-9450