

DIGITAL DATA LOGGER (DDL) GENERAL INFORMATION

A **Digital Data Logger (DDL)** is a device that provides the most accurate method for monitoring and recording vaccine storage unit temperatures. In addition to current temperatures, a DDL tracks how long a storage unit operates outside the recommended temperature range, known as a **temperature excursion**.

Unlike a standard minimum/maximum thermometer, which only displays the lowest and highest temperatures reached, a DDL records all temperature readings at preset intervals, offering a complete and reliable temperature history.



Effective **July 1, 2018**, the Arkansas Department of Health requires all **Vaccines for Children (VFC)** providers to use a DDL for monitoring temperatures in **each vaccine storage unit**. The implementation of DDLs, along with upgrades to pharmaceutical-grade and stand-alone storage units, has significantly reduced vaccine loss and saved thousands of dollars in vaccine inventory.

Important Reminders

- A DDL must be used in every unit that stores vaccines.
- Each DDL must have a valid certificate of calibration.
- A backup DDL is required and must also have a valid certificate of calibration.
- The backup DDL's calibration expiration date should be **different from those currently in use**.

VFC Thermometer Requirements

Providers are required to always use a VFC-compliant DDL in each vaccine storage unit and must have at least one VFC-compliant back-up thermometer for use when primary thermometers fail or are sent for recalibration. To meet specifications, thermometers must:

- Be accurate within $\pm 1^{\circ}\text{F}$ ($\pm 0.5^{\circ}\text{C}$).
- Be digital, with the digital display placed outside the unit to allow readings without opening the door.
- Have a buffered temperature probe immersed in one of the following: a vial filled with liquid (e.g., glycol, ethanol, glycerin); a vial filled with loose media (e.g., sand, glass beads); or a solid block of material (e.g., Teflon[®], aluminum).
- Display current, minimum, and maximum temperatures.
- Have a visual or audible alarm to signal out-of-range temperatures.
- Have a valid Certificate of Traceability and Calibration Testing. Arkansas allows up to 2 years between calibrations. **Non-calibrated thermometers can be unreliable and record inadequate information.**

DDL vendors may not be fully knowledgeable about VFC program requirements; therefore, it is imperative that this guide be used to clarify and verify any information provided when purchasing a vendor's DDL device.

Points To Remember When Purchasing

- DDLs must be sent back to the company every 2 years for recalibration. Some DDLs are expensive to recalibrate, and you may choose to purchase a new DDL instead.
 - If you have access to a bio-med department or company that can recalibrate the DDL, you must complete the AR VFC Calibration Certificate Form.
- Make sure it is calibrated within an accuracy of $\pm 1^{\circ}\text{F}$ ($\pm 0.5^{\circ}\text{C}$).

- Prior to shipping the DDL to the manufacturer, make sure you are aware of how long the calibration process will take and how much the calibration will cost. Allow a few weeks for the calibration process to be completed and returned. **Always have a backup device available.**
 - You may need to change the DDL unit rather than recalibrating the old one if the DDL calibration is more expensive than purchasing a new DDL.
- Consider having an audio alarm and a notification via text or email.
- Check the DDL’s power systems, upload capability, and storage capacity.
- For DDLs that plug into the wall, make sure you have enough electrical outlets.
- A battery powered DDL is better; however, you must make sure the batteries can be changed without the DDL being sent back to the factory.

Types of DDLs:

- USB based DDLs have local alarms and must plug into a computer with a USB Port. It is highly recommended to download the DDL data on a weekly basis and review the report for any potential excursions. Temperatures must be manually recorded twice a day (beginning and ending shifts) and document the min/max once a day, even when the DDL is in use. A temperature paper log must be maintained and placed by or on the storage unit.
- WiFi/Cellular/Bluetooth DDLs will alarm you by phone, text, or email when the temps are out of range. Staff can sign in remotely from any computer or device. Paper logs are not required if staff can sign in electronically, for example PharmaWatch.

Other considerations:

- DDLs must have a digital readout visible when the storage unit is closed.
- Consider buying directly from the DDL vendor.
 - Ensure the DDL vendor provides training or has training videos on how to complete the set-up process from start to end.
 - Always compare vendor prices.
- It is highly recommended to download the DDL data once a week to ensure no excursion has occurred and avoid the vaccine from being compromised.
 - If the vaccine is compromised, you must contact the patients that were vaccinated during the time of the excursion and revaccinate.

This is not an exhaustive list. The provider may purchase any DDL that meets January 1, 2018, VFC specifications:

USB port and WIFI versions	www.saberteck.com
USB downloads	www.deltatrak.com
USB port and WIFI versions	www.fishersci.com
Cloud based system	www.sensoscientific.com/vaccine-vfc
USB port, Cloud and WIFI versions	www.vfcdataloggers.com
USB port	www.berlinger.com
Cloud based system that alerts via email, text, and phone when temps are out of range	www.pharmawatch.com
Hexmodal	https://www.hexmodal.com/