

MDHHS Guidance for VFC Digital Data Loggers

This handout provides steps for initial set up and use of the VFC Digital Data Logger (both TP and TC models). Proper use of storage equipment is important in ensuring vaccines are safe and effective. The Michigan Department of Health and Human Services (MDHHS) follows recommendations set forth by the Centers for Disease Control and Prevention (CDC) on digital data loggers.

What Features Should a Digital Data Logger Have?

MDHHS and CDC recommends that digital data loggers include the following features:

- Alarm for out-of-range temperatures
- Current, minimum, and maximum temperatures
- Low battery indicator
- Accuracy of +/- 1°F (0.5°C)
- Memory stores at least 4,000 readings, device will not write over old data, and stops recording when memory is full
- User programmable logging interval (or reading rate): CDC recommends a temperature recording interval of one reading at least every 30 minutes, if no 30 minute interval setting use an interval less than 30 minutes
- Detachable probe in bottle filled with a thermal buffer (e.g., glycol, glass beads, sand, Teflon®)

Equipment

Be sure to have all necessary equipment as provided by manufacturer—Control Solutions:

- Data logger, with clear plastic cover
- Extra battery—should already have a battery in unit
- 2 year Certificate of Calibration (not expired)
- Quick Start Guide (keep handy for guidance on battery replacement or to reference LCD indications)
- Clear plastic stand and single data logger cradle
- Glycol liquid probe vial

Preparing Your VFC Digital Data Logger

- Use the Quick Start Guide to prepare data logger for use
- Install software and USB driver by inserting mini-disk (provided) into CD drive of computer
 - Follow instructions in step 1 of the Quick Start Guide
- If a mini-disk was not provided; please download the latest software from: www.vfcdataloggers.com
 - Once on the website, on the left hand side under links, click EL-WIN-USB Software Download
- Ensure battery is correctly installed and unit is working
 - NOTE: If battery goes bad, logger will not work, but previous temperatures are maintained

Setting Up Your Digital Data Logger

- Insert data logger into available USB port on computer
 - NOTE: Leaving data logger plugged into computer will decrease battery life
- Double-click on Easy Log USB icon on Windows™ desktop; this will load configuration software
- Once configuration software is open, select set up and start USB Data Logger option:
 - Name data logger—the number of logger will already be visible
 - May want to name logger based on unit it is placed in (e.g. Unit #1 Freezer)
- Select temperature scale and input type; K for TC models and A or 2 for TP models (check tag on probe)
- Select frequency of reading—this is how often data logger will record a temperature

- Recommended every 30 minutes by CDC; if 30 minutes is unavailable, use interval less than 30 minutes
- Select data logger display; LCD on for 30 seconds after button pressed or suggest LCD always on
 - LCD ‘always on’ allows temperature to be seen when near storage unit and conserves battery life in newer VFC 5000 TP models; in older VFC 5000 TC models ‘always on’ may decrease battery life
- Select how data logger is to perform when it is full—suggest selecting logger stops when full
- Select alarms to be set, and set temperature readings that would indicate high and low temperatures
 - Fahrenheit reading, suggest 47°F for high and 35°F for low for refrigerator; suggest 6°F for high and -59°F for low for freezer (-40°F is lowest allowable for TP models)
 - Celsius readings, suggest 9°C for high and 1°C for low for refrigerator; suggest -16°C for high and -51°C for low for freezer (-40°C is lowest allowable for TP models)
 - In order for logger to continue to indicate an alarm condition, check “hold”
- For TP models, enter the number of consecutive readings in an alarm condition before it is indicated by the LEDs—suggest:
 - 1 reading (no delay for both high and low alarms)
- Indicate when to start data logger, suggest:
 - Delay start and add 10 minutes to displayed start time
 - When data logger button is pressed, remember to press button once

How Do You Place a Data Logger in a Storage Unit?

- Data logger monitor is placed outside refrigerator or freezer; place probe in storage unit, centrally located directly with vaccines. Connect probe to monitor via the 4-foot cable—for large storage units, 10-foot cables are available (10-foot cables come standard with TP models).
- TP models only will flash “Prob” if logging and not connected to the probe. If this occurs, you will receive the following error upon downloading: “During the last log session, a probe connection error occurred. Ensure the probe connector is fully inserted. Connection errors will be shown on the graph as readings lower than -58°F (-50°C).”
- Pharmaceutical grade storage units may have a built-in port, located in the wall of the unit, which is designed to allow the cable to enter the unit and connect to the probe in glycol solution in the center of each storage unit
- If storage unit does not have a built-in port for temperature monitoring:
 - The cable should enter refrigerator/freezer on the hinge side, high in the corner
 - Be careful to monitor cable and ensure that frost does not build up

Downloading Data

- To download data, remove the data logger from outside of the storage unit by disconnecting it from the cord
 - Probe should stay inside of storage unit
- Place data logger into USB port on computer, open EasyLog software via the EasyLog USB icon on your desktop, choose option to “Stop the USB Data Logger and download data”
 - A pop up will appear prompting to save as a .txt file; add date to file name and save in desired location on computer—suggest saving in a shared folder on the computer labeled “VFC Data Logger”
 - NOTE: When saving the .txt file, software will default to name of the logger—if name is not changed every time it is downloaded, it will overwrite previously saved data
 - After naming logged data (e.g., Freezer 2 January 9, 2015), a graph program will open automatically and display downloaded readings as a graph
 - Graph screen information can be saved in additional formats using the export function; exporting to an Excel file will give quick access to graphs in the future

- Any out-of-range temperature can be checked from the graph screen or by clicking on the Data View option in the top right hand corner—out of range temperatures will be highlighted in red
- Once data has been saved and reviewed, the data logger will need to be set up again
 - Select set up and start USB data logger option from the EasyLog USB software screen and repeat the steps under “Setting Up Your Digital Data Logger” section of this tip sheet
- Remember: Data logger data should be downloaded, reviewed, and saved weekly
- All temperature data should be stored for at least 3 years, **including** temperature logs and .txt files

Reset Minimum/Maximum Temperatures

- Assess and record temperatures on a temperature log twice daily (once in the AM and once 30-60 minutes before leaving for the day)
- It is recommended to assess, record and **RESET** min/max temps every AM
- Steps on how to record temperatures:

Daily-AM

- Push button once, gives current temperature; mark temperatures on temperature log
- Push button 2nd time (shows▲, gives max temp since last cleared)—write value as Max on temp log
- Push button 3rd time (shows▼, gives min temp since last cleared)—write value as Min on temp log
- Hold down the button until “**CL**” appears; this indicates the Min/Max has been cleared and has been reset

Daily-PM

- Push button once, gives current temperature; mark temperatures on temperature log
- Daily morning min/max temperature recording will be required for all VFC providers beginning January 1, 2017

Key Points to Remember

- When need to change the battery, follow the instructions in step 2 of the Quick Start Guide
- In case of temperature excursion, download data logger and print out readings to assess temperature history and durations; this is useful when calling vaccine manufacturers for viability concerns
- Please follow manufacturer recommendations for required calibration
- VFC providers are required to follow the guidelines within the VFC resource book; the resource book can be found at: www.michigan.gov/vfc
- Digital data loggers and all thermometers must be calibrated with a Certificate of Traceability and Calibration Testing that is not expired
- Consider an alarm/notification system; these systems alert staff to temperature changes, however, cannot be used to monitor daily temperatures (digital data loggers do not phone staff to alert of out-of-range temperatures)
- As with other storage equipment, there will be a cost to maintaining the digital data logger (cost can vary with equipment purchase, check with the manufacturer)
- Beginning January 1, 2017, use of digital data logger in all storage units will be required for VFC providers
- Know the resources; review MDHHS guidance & CDC’s Storage and Handling Toolkit for current information; utilize CDC trainings “You Call the Shots” and “Keys to Handling Your Vaccine Supply” or MDHHS Immunization Nurse Education (INE) “Vaccine Management Module”

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