

## VFC320/325

### Vaccine Display Loggers Operation

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VFC320  
1 K-TC Probe



VFC325  
2 K-TC Probes

All models shown with optional memory card

# Product Specifications

	VFC320	VFC325
<b>Operating Range (unit only)</b>	-4 to +158°F (non-condensing)	-4 to +158°F (non-condensing)
<b>Int. Temperature Sensor</b>	Thermistor	N/A
<b>Int. Temperature Accuracy</b>	±1.8°F	N/A
<b>Ext. Temperature Sensor</b>	Thermocouple	Thermocouple (x2)
<b>Ext. Temperature Range</b>	-300 to +2000°F	-300 to +2000°F
<b>Ext. Temperature Accuracy</b>	±1.8°F (unit)	±1.8°F (unit)
<b>R/H Sensor Type</b>	N/A	N/A
<b>% RH Accuracy</b>	N/A	N/A
<b>Storage Capacity</b>	32,000 (div. x 2)	32,000 (div. x 2)
<b>Resolution</b>	0.1°	0.1°
<b>Response Time (63%)</b>	1 minute	1 minute

## Accessories (for current pricing go to [www.dicksondata.com](http://www.dicksondata.com) or call 1-800-323-2448)

<b>Software</b>	<b>Order #</b>
DicksonWare™ Software and USB Download Cable	A016
DicksonWare™ Software and Serial Download Cable	A015
DicksonWare™ SECURE Software and USB Download Cable (21CFR11 Compliant)	A026
DicksonWare™ SECURE Software and Serial Download Cable (21CFR11 Compliant)	A025
<b>Calibrations</b>	<b>Order #</b>
NIST Traceable Calibration 3-pt (new unit)	N300
NIST Traceable Calibration 1-pt (new unit)	N100
A2LA Accredited Calibration 3-pt. (new units)	N400
Certificate of Validation	N520
<b>Other</b>	<b>Order #</b>
Card Reader w/ FLASH Memory Card	A220
Extra FLASH Memory Card	A210

**DICKSON**

Product Specifications & Accessories

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# Operating Instructions

## MIN/MAX:

- **Display Min/Max:** Pressing this button will start the Min/Max display cycle.
- **Clearing Min/Max Values:** To clear the stored min and max values, hold the MIN/MAX and ALARM buttons down together until “clr” appears on the display. The min and max values now displayed will be those recorded after the min and max were cleared.

Note: DicksonWare™ will show the minimum and maximum values of the entire downloaded data set. These could be different than those displayed on the unit itself since, the unit displays continuous readings while the unit logs samples taken every 5 minutes for the alarm delay time.

## ALARM OPERATION:

- When an alarm condition occurs the display will automatically display ALRN. The alarm will not sound until the two minute alarm delay period has passed.
- If the alarm condition clears before the alarm delay period has passed, the display will automatically clear the ALRN notification.
- If the alarm delay period has passed and the alarm sounds before the alarm condition clears, the alarm will continue to sound and the display will flash ALRN until the ALARM button is held down till CLR is displayed. This will clear both the audio and visual alarm notification.

NOTE: Once the alarm sounds, it will continue to sound regardless of whether the alarm condition still exist.

- **Silencing Alarm:** Pressing this button will silence the alarm. **Disabling the Visual Alarm:** Holding this button down for 5 seconds will clear the ALRN condition. If the unit is still in alarm condition the alarm will display and sound again.

Note: Alarm minimum and maximum parameters can only be set in DicksonWare™. Refer to the DicksonWare™ software manual.

## SAVE:

- **Saving to Flash Memory Card:** When using the Flash Memory Card pressing the SAVE button will download stored data from the logger to the memory card. STORE will appear on the display momentarily and the counter will start counting down from 100. **Do not remove the memory card until STORE is no longer displayed and the unit is displaying current readings.**

Note: Leaving the memory card installed in the logger will reduce battery life by 50%. If you notice “Err” on the display, please refer to the Troubleshooting section of this manual.

## Hardware

- **Display:** These loggers have a continuous display than cannot be disabled. The display will toggle between temperature readings for channel 1 and channel 2. The display will read PROB if the thermocouple(s) is not connected.
- In the lower right hand corner of the display, “1C”, “2C” or “1F”, “2F” identifies which channel temperature reading is displayed. The “K” on the left of the display window identifies the type of probe being used “k-thermocouple probe”.
- **120V AC Adapter with 10 ft cable:** Once the vaccine data logger is positioned on the outside of the refrigerator or freezer, plug the adapter into the logger and into the electrical power source. The 10 ft cable extension allows additional length based on individual need.
- **Battery Replacement:** This unit has an average battery life of 6 months and requires 4AA batteries. The AC adapter is recommended for most applications. To replace the batteries, remove the battery door on the back of the unit using a Phillips screwdriver. Insert the 4AA batteries and replace the battery door.
- **Installing a Flash Memory Card Reader:** Follow the instructions included with the flash card reader. Additional information and trouble shooting information on the card reader can be found at that manufacturers website.
- **Flash Memory Card:** With the use of the optional Flash Memory Card and reader, you can store 100 Full Data Loggers. This eliminates the need to physically remove your loggers from their application for uninterrupted monitoring.

The Flash Memory Card has been formatted at Dickson in order to work with DicksonWare™ software. Please contact Technical Support if you wish to format your own card.

## Getting Started

To setup the VFC320 or VFC325 you'll need to be at your PC.

1. **Insert Batteries:** Included in the shipping box are 4AA batteries. Remove the battery door on the back of the unit using a Phillips screwdriver. Insert the 4AA batteries and replace the battery door.
2. Position velcro on the back of the unit for mounting.
3. K-thermocouple beadwire probe(s) are connected to the unit
4. **Installing DicksonWare™ Software:** Make sure the PC is running Windows 98 or higher. DicksonWare™ Version 10.0.8 or higher is needed to operate this VaccineData Logger. If you currently have DicksonWare™ on the PC, check the version. Choose Help on the Menu Bar. Choose About. The version is shown in the dialog box.  
**To install and start DicksonWare™ Software** onto your PC, insert the CD into the CD drive. Follow the steps on the screen. Once installed a DicksonWare™ icon appears on the desktop.
5. **Connect** one end of the USB cable to the logger and the other cable end to the PC.
6. Press the **MIN/MAX** button to toggle between Fahrenheit and Celsius on the display
7. **Double click the DicksonWare™ icon.** A dialog box appears to register the software. Click on one of the options. **Follow these steps to setup the logger:**
  - a. Across the top menu bar, choose **File, Preferences**. Click on Fahrenheit or Celsius for down loaded data temperature readings. Then choose **OK**.
  - b. Click the **Setup** button located in the upper left hand corner of the software window. This establishes communication between the Logger and DicksonWare software.
  - c. A dialogue box appears. Select USB or Serial depending on the type of download cable. **Click CONTINUE.**
8. A setup window pops up with five tabs. The Identification tab is chosen. All fields should be automatically filled in. The Model number, Serial number, Calibration Date and Factory Calibration Date are identified. This confirms that DicksonWare has recognized the logger. Factory Calibration date identifies when the unit was calibrated. Calibration Date identifies when the next calibration is needed. Should all fields remain blank, refer to "No Communication" in the Troubleshooting section of this manual.
9. In the setup window, choose the Samples tab.
  - a. No changes can be made to the **Start Date/Time**, sample interval or stop or wrap when full section.
  - b. **Samples per Channel** tells you how many samples of data have been collected and the logger capacity that has been used.
  - c. **Log Time** identifies how much time the chosen sample rate will cover to fill the logger.
  - d. **Battery Level** shows the amount of battery life available. To achieve longer battery life during operation, use a less frequent sample rate, disconnect the unit from the USB port when not downloading data, limit the frequency of memory card transfers and DO NOT insert the memory card all of the way into the logger unless downloading.
10. In the setup window, choose the **Channels** tab. Each unit has two channels. The temperatures shown here are real-time readings. No changes need to be made.
11. **Setup the Min/Max Alarm conditions**
  - a. In the setup window, choose the Ch1 Temp Alarm Tab to set the Min and Max alarm conditions for Channel 1. Ch1 is the external probe for the VFC320 and top probe for the VFC325.
  - b. In the setup window, choose the Ch2 Temp Alarm Ch2 is the internal sensor for the VFC320 and the bottom probe for the VFC325. The factory preset alarm temperature parameters are shown. To change these temperatures, just type in another Minimum temperature and/or Maximum temperature.

**CAUTION:** The preset alarm temperatures that you are setting are lower than the ambient or air temperature. Therefore, when the alarm are enabled they will sound. Do the following:

**Silencing the Alarm** – press the ALARM button on the front of the unit to silence.

**Disabling the Visual Alarm** – press the ALARM button until CLR will appear on the display. ALRN will continue to display until the logger & probe(s) have been positioned in the refrigerator and or freezer.

## 12. To setup Alarm Features, Click on the Alarms Tab

- Check Alarm Enabled to display ALRN across the display if temperatures go out of the desired ranges.
- Check Buzzer Enabled for an audible alarm if temperatures go out of the desired ranges.
- Click on Update to save these changes. To disable these alarms, click on the checkmark and choose update.

Note: These alarm features apply to both channels.

The logger is now sampling and ready for use. A Delta ( $\Delta$ ) symbol will appear on the display to confirm logging. You will have ambient temperatures until you position the probes inside the refrigerator or freezer. Account for this movement when evaluating the data.

Mount the logger and position the probes. Allow time for the probes to display readings. Press the **ALARM** button down until CLR appears on the display. The alarms are now reset.

## Downloading Data on DicksonWare

**Real Time Monitoring:** Monitor and graph your process as it happens and print and save from real time screen. (This feature should be used sparingly as it causes the battery to drain very quickly unless using optional AC adapter)

**Customize Graphed Data:** DicksonWare™ calculates Min, Max and Average of all data collected. Customize data by eliminating unnecessary data points and customize Min, Max and Average to show only desired information.

**Export Data:** A snapshot of your graph or a real-time graph of points can be easily exported to other programs such as Excel™ or PowerPoint™.

**Super Size Storage:** With the use of the optional Flash Memory Card and reader you can store 100 Full Data Loggers. This eliminates the need to physically remove your loggers from their application for uninterrupted monitoring.

**\*\* CLICK ON THE FEATURES BUTTON IN THE \*\***

### SOFTWARE FOR DETAILED INSTRUCTIONS ON HOW TO USE ABOVE FEATURES

**Download:** Clicking this button will automatically extract all logged data into a Graph and Table format for viewing. You may also choose to retrieve data via the optional Flash Memory Card. After Saving data to the card, simply insert the card into your reader, open the LOG Folder, then double click on the appropriate LOD file which will automatically open DicksonWare™, if not, manually open DicksonWare™. From the top Menu bar, click on File > Open and browse to the appropriate drive for your reader and select the LOD file.

## DicksonWare™ Software Specifications

- Microsoft Windows® compatible
- Allows for simple viewing and zooming of logged data
- Easy set-up of Dickson Data Loggers including:
  - User selectable sample intervals from 10 seconds to 24 hours
  - Display temperature in °C or °F
  - Delayed logger start times
  - Logger data capacity can be set to wrap data or stop when full
  - Allow for real time monitoring and graphing.
  - Effortless exporting of data and graphs to other software
  - Data can be viewed in tabular (numeric/table) or graphical formats
  - Fast downloading of logged data - 30 seconds (typical) from full logger
  - Even shows battery power status for battery operated loggers

## Specifications:

- **Compatible With:** Microsoft Windows® 95, 98, 2000, NT & XP
- **PC Requirements:** PC with 386 MHz or better microprocessor, 4 M RAM, 1 free COM (serial) port, CD drive
- **Cable Type/Length:** 9 pin male D-shell to male 2.5mm stereo plug, 6' long
- **Computer Interface:** RS-232 COM (serial) port
- **DicksonWare™ Version Required (minimum):** See Specific Model for Version Requirement

## DicksonWare™ SECURE Software Specifications

To ensure the authenticity, integrity and confidentiality of data, 21CFR Part 11 requires that electronic records adhere to certain criteria. DicksonWare™ SECURE software collects data from our validated data logger, creates detailed graphs and reports and contains the following features that comply with 21CFR11:

- Password protection
- Electronic signature consisting of User ID and Password
- Collected data encrypted in secure files
- Audit trail capability to identify date, time, user and action

### For a complete 21CFR11 compliant package, order the following:

1. Appropriate Validated data logger
2. DicksonWare™ SECURE Software & Serial or USB Download Cable - **A025 or A026**
3. Certificate of Validation/logger - **N520**
4. Choose One Calibration Option Listed Below:
  - NIST Traceable Calibration 3-pt. (new unit) - **N300**
  - NIST Traceable Calibration 1-pt. (new unit) - **N100**
  - A2LA Accredited Calibration 3-pt. (new unit) - **N400**

## Specifications:

- **Compatible With:** Windows® 95, 98, 2000, NT & XP
- **PC Requirements:** 386MHz processor or higher, 4MB RAM, 1 free COM (serial) port, CD drive
- **Cable Type/Length:** A025: 9 pin male D-shell to male 2.5mm stereo plug, 6' long; A026: USB male series "A" plug to 5-pin male series "B" mini plug, 6' (2 meters)
- **Operating Range:** -20 to +135°F, 0 to 95%RH (non-condensing)
- **Computer Interface:** RS-232 COM (serial port)

## Frequently Asked Questions

1. **Sample Interval:** The Sample Interval determines how frequently the data logger will save a reading. Using DicksonWare™ Software, the user can set a Sample Interval ranging from 10 seconds to 24 hours in 10 second increments. A temperature logger with data storage of 32,512 set at a 10 second Sample Interval will record for 3.75 days, while the same logger set at a 1 minute Sample Interval will record for 22.5 days.
2. **Data Storage:** Data Storage is the number of Sample Points a data logger can hold. You will find models that range from 7,680 samples to 32,512. A temperature logger with Data Storage of 32,512 and a sample interval set at 30 seconds would record for 11.25 days, while a temperature logger with Data Storage of 7,680 and the same sample interval would record for only 2.6 days.
3. **Does it have to stay connected to a PC in order for it to work?** No. Unless you're viewing data in real-time you only connect the logger to a PC when you want to view / retrieve data.
4. **What happens when all the storage space is taken up? Do I have to throw it away?**
5. After you have downloaded the data, you simply "clear" the logger and it is ready to log more data.
6. **What happens if I leave it monitoring somewhere too long?** The Data Loggers have two user selectable modes, Stop and Wrap. In Stop mode, they will quit logging data when the memory is full. In Wrap mode, the Logger will begin to overwrite the oldest data in its memory.

7. **Where can I put them?** Depending on the Dickson model, just about anywhere. We have waterproof units, stainless steel models, units with probes, and units that handle extreme temperatures. Our wide selection of instruments should fit about any application.
8. **What is the biggest advantage of a Data Logger?** Its data is “logged”, stored on a microchip inside the Data Logger. Data in electronic memory takes advantage of the power of a PC and software.
  - \* Store the data as you would store any document on your PC.
  - \* Retrieve archived data as easily as opening a file on your PC.
  - \* Share the data as you would any PC file, email, copy and paste.
  - \* Data can be imported into spreadsheet software and word processing documents.
  - \* Easily import data from multiple data loggers onto a single graph.
9. **How are they mounted?** The smallest ones, about the size of a pager, can be wall-mounted with Velcro or simply set anywhere you need to monitor. The larger units have keyhole slots for wall mounting and can also stand on their own.

## Troubleshooting

For troubleshooting information, click [here](#) for the technical support page.

## Error Codes

- Err 1 ..... No memory card  
 Err 2 ..... Memory card locked or protected  
 Err 23 ..... Memory card requires reformatting  
 Err 66 ..... Memory card full

## Warranty

Dickson warrants that the products it sells will be free from defects in material and workmanship under normal use and service for a period of twelve months after delivery. In the event of a claim under this warranty, the product or part must be returned to the factory for repair or replacement (shipping pre-paid) with a Return Authorization Number (see Return Information above). It will be repaired at Dickson's option without charge. This warranty DOES NOT cover routine calibration, pen, chart and battery replacement. The foregoing warranty and remedy are exclusive and in lieu of all other warranties either expressed or implied. Dickson shall not be liable for consequential or incidental damages resulting from failure or malfunction of its products. Dickson makes no warranty for products not manufactured by it or for any products modified by buyer, or subject to misuse or neglect.

## Factory Service & Returns

Contact the factory (630-543-3747) for a Return Authorization (RA) Number before returning any instrument. The model number, serial number and a purchase order number will be requested before an RA number is issued.

- Carefully repack the instrument, label the outside of the box with the RA# and return the instrument (freight pre-paid) to Dickson.
- All instruments that do not have the RA# clearly marked on the outside of the box will be refused. When returning instruments for credit, please include all accessories in shipment.
- Calibration/Freight charges are non-refundable.

NOTE: Dickson shall not be liable for consequential or incidental damages resulting from failure or malfunction of its products.

- **Customer Satisfaction:** Dickson takes pride in providing you, the customer, with the highest quality instrumentation. We welcome the opportunity to help you in any way possible. Whether it be a question or a new idea in documentation, the Dickson Company would like to hear your response. Please call our Customer Service Department at 1-800-323-2448 or (630) 543-3747 (in Illinois).
- **Software Return Policy:** IMPORTANT-Read your Software License Agreement carefully before installing software. Dickson will accept returns for replacement of defective disks and CDs only.

## Calibration Services - New Units

- **N100 - NIST Traceable Calibration 1-Point:** Includes documentation to one Dickson pre-selected point on new units only.
- **N300 - NIST Traceable Calibration 3-Point:** Includes documentation of three Dickson pre-selected points (a high, medium, and low) on new units only.
- **N400 - Deluxe A2LA Accredited NIST Traceable Calibration 3-Point:** ISO Guide 25/A2LA Documentation of 3 pre-selected points of as found data before and after calibration for Dickson temperature and/or humidity instrumentation on new units only.
- **N995 - NIST User Selected Temperature Points:** Documentation of one customer specified point. Should be selected in addition to one of the above calibration options.

## The Importance and Benefits of Regular Calibrations

Once you begin to use your precision Dickson instrumentation, regular calibrations are necessary to ensure accurate readings.

The following Calibration Services are available:

- **N150 - NIST Traceable Calibration 1-Point:** Includes documentation to one Dickson pre-selected point after re-calibration.
  - **N350 - NIST Traceable Calibration 3-Point:** Includes documentation of three Dickson pre-selected points (a high, medium, and low) after re-calibration.
  - **N450 - Deluxe A2LA Accredited NIST Traceable Calibration 3-Point:** ISO Guide 25/A2LA Documentation of 3 pre-selected points of as found data before and after calibration for Dickson temperature and/or humidity instrumentation.
  - **N995 - NIST User Selected Temperature Points:** Documentation of one customer specified point. Should be selected in addition to one of the above calibration options.
1. **Why should I recalibrate my instrumentation?** Over time dirt, dust and normal handling can throw your precision instrumentation out of calibration. Regular calibrations ensure that you receive the most accurate readings possible.
  2. **How often should I recalibrate my instrumentation?** Depending on the environment your instrument is used in and how often it is handled you will want to recalibrate your instrument every 2 years. Instruments in environments where there are extreme temperatures, wide temperature ranges, humidity or pressure variations, high condensation, dirt, dust and other debris will require calibration at least every 6 months. Instruments that are frequently moved or in locations with heavy machinery that cause vibrations should also be calibrated at least every 6 months.
  3. **Why should I return my instrument to Dickson for calibration?** Dickson calibrates your instrument at the factory using proprietary production/calibration software that guarantees proper calibration.

**Our Capabilities:** Dickson is the first manufacturer of humidity and temperature instrumentation to receive A2LA accreditation. We are also NIST Traceable; our procedures conform to MIS-STD-45662A, ANSI/NCSL 2540-1-1994, ISO/IEC Guide 25 and ISO10012. We are experts in the manufacture and calibration of humidity and temperature instruments.

- **Fast Service:** Our turnaround time is 3 days or less so you receive not only expert service but fast service as well.
- **Easy:** We make it easy for you! No phone calls for Return Authorization Numbers are required. We remind you when your instrument is due for calibration. You simply send in the completed Calibration Order Form with your unit for calibration with freight prepaid to Dickson.