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User's Guide

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DATA CAPTURE SOFTWARE

For OMA-VM606E, OMA-VM500-7-DCP, OMA-VM505-DCP, OMA-VM520-DCP, OMA-VM540-DCP, and OMA-VM541-DCP, Alarm Dialers with Ethernet LAN Option

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WARNING: These products are not designed for use in, and should not be used for, human applications.

OMEGA®
Your One-Stop Source for Process Measurement & Control!

The IP Setup program is used to set the static IP address of Omega products equipped with the Ethernet LAN option which includes the OMA-VM606E, OMA-VM500-7-DCP, OMA-VM505-DCP, OMA-VM520-DCP, OMA-VM540-DCP, and the OMA-VM541-DCP.
For the rest of the manual the units will be referred to as monitor or Omega Server

Before starting verify that your network has:

- A DHCP server. The monitor must obtain an initial IP address from a DHCP server.
- Ports 10001 (2711h) and 30718 (77FEh) are not blocked.

You should already know:

- A new static IP address obtained from your IT manager. **NOTE:** The IP address for the device and the PC running IP Setup must be on the same Local Area Network and subnet.

Powering up the Monitor

1. Plug the Ethernet cable into the **LAN** jack.
2. Plug the power jack into the **POWER INPUT** on the Monitor then plug the power pack into a wall outlet.
3. The LEDs on the Ethernet jack will begin to blink first orange and then green. When fully powered up, the left LED will be on steady green and the right LED will blink green.
4. Turn on the Monitor by moving the power switch located to the left of the terminal blocks on the side of the Monitor from 0 to 1. The display will turn on.
5. Verify that the left LAN LED is green and on steady, and the right LAN LED is blinking green.

How to set the static IP address

The Monitor must have a static IP address. The Monitor ships in DHCP mode so when you connect it to your network it will obtain an IP address automatically from your DHCP server. Once the Monitor has obtained an IP address from the DHCP server, you can then set the Monitor to the static IP address.

1. Run the Omega IP Address Setup program.
2. Click on the **Find all Omega devices…** button to find all of the Omega devices on your network. A list of the devices' IP address and MAC address are displayed. (MAC address is found on the serial # label)
3. Click on the IP address of the new monitor you are adding to the network. The selected IP address will turn yellow.
4. Type in the static IP address you obtained from your IP manager in the text boxes.
5. Click on the **Set the selected server's IP address to >>>** button to set the selected monitor's current IP address to the new static IP address. You will be prompted to confirm this change. Click OK to proceed.
6. The program will again find all Omega devices on your network. Please verify that the IP address has been changed. If not repeat the above procedure.

How to reset a Monitor from a static IP to DHCP mode

If you are moving a monitor configured with a static IP address to a network where this static IP address will not function, you should reset the Monitor back to DHCP mode before the move. The OMA-VM606E has the ability to reset to DHCP via hardware.

1. Run the Omega IP Setup program.
2. Click the **Find all Omega servers …** button to find all of the Omega devices on your network. A list of their IP address' are displayed. Only Omega's IP addresses are displayed.
3. Click on the IP address of the device you want to reset back to DHCP mode. The selected IP address will turn yellow.
4. Click on the **Reset the Selected Server back to DHCP Mode** button. You will be prompted to confirm this change. Click OK to proceed.
5. The program will again find all Omega devices on your network. The program will confirm that the IP address has been reset from a static IP to DHCP mode.

A device which is not able to be found on the network or communicated with may have invalid network address settings and need to be restored to DHCP mode. This can be achieved by using the "Reset Device to DHCP" found under the advanced menu.

Advanced Tools

Under the Advanced menu option there are three advanced tools to allow you to:

- Set the IP Address, Gateway Address, and Subnet Mask via web
- Manually Set an IP Address when no DHCP server is present or when you can not locate the device on the network
- Test Communications to an Omega device

Set IP, Gateway, Subnet via Web See note below!

This feature is for IT professionals and is to be used only if it is necessary to change the subnet mask. This procedure is unnecessary for standard networks.

Verify that you have the latest version of Java before running.

1. Click on the **Server Properties** button to display the Server Properties.
2. Verify the correct IP Address setting
3. Enter the Subnet Mask
   -Verify that the Subnet Mask is correct before clicking Update Settings button. If an incorrect Subnet Mask is entered the TG device will be unable to communicate.
4. Enter the Gateway Address
   -Verify that the Gateway Address is correct before clicking Update Settings button. If an incorrect Gateway Address is entered the TG device will be unable to communicate.
5. Click the **Update Settings** button.
6. Close the browser window.

Note: Current OMA-VM500-7-DCP units no longer have the ability to set the IP via Web. Telnet is still available. Ex; From a command prompt, telnet ***192.168.10.55 9999 where*** 192.168.10.55 is the IP address of the unit you wish to edit the IP or gateway. 9999 is the port number.

Manually Set IP

In networks without a DHCP server or when you are unable to find an Omega device on the network, it can set the static IP address manually.

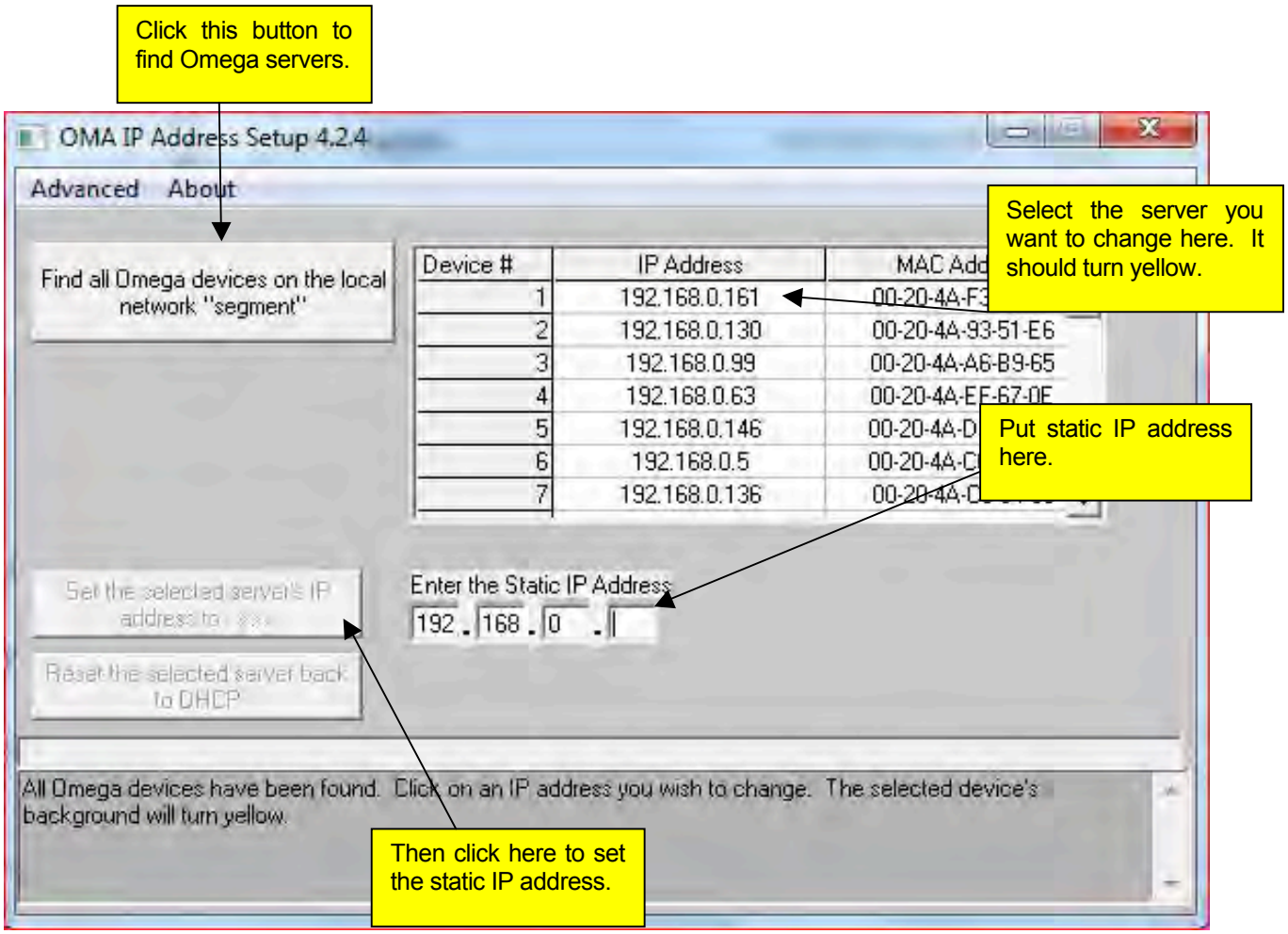
You will need the MAC address of the device you are communicating with. This can be found on the white label on the network enabled Omega device itself.

1. Enter the MAC address of the device in the window and click OK.
2. Enter the static IP address you wish to give the device and click OK.
3. Confirm the static IP address and click OK.
4. Depending on your network configuration, the device may or may not show up in the device listing now.
5. Perform the Test Communication function to verify IP Address functionality. If Test Communication fails, utilize the ping command by opening a command prompt and entering ping xxx.xxx.xxx.xxx (where xxx.xxx.xxx.xxx is the IP address you gave the device.)

Test Communications

To verify that port 10001 is successfully opened in your firewall or to verify general data functionality of the monitor, the Test Communication function is available.

1. Select Test Communication from the Advanced Menu
2. If you have selected a device from the list and would like to Test Communication to it click Yes to the “Test This Device?” prompt. If you would like to test communication to another IP address click No.
3. If you haven’t selected a device from the list to test or selected No from the “Test This Device?” prompt, enter the IP address of the Omega device you wish to test.
4. IP Setup will attempt to communicate with the device at that address. Results will be displayed.
5. If communication fails, verify that the IP address is correct for the device.
   Verify that IP address can be reached from your computer by opening a command prompt and entering ping xxx.xxx.xxx.xxx (where xxx.xxx.xxx.xxx is IP address you gave the device.)



Troubleshooting

Problem
No Omega devices are found on the network

Check the simple things first
Pull the power jack from the monitor, wait a couple of seconds, plug it back in and try to find the monitors again. If that does not work, try the items below.

Verify that the monitor is powered on from its power supply.
Verify that you connected a good Ethernet cable to the monitor.
Verify that the LEDS on the LAN adaptor are on as described below, if not **recycle power by pulling out the power jack from the Monitor**.

Link LED (Left Side)		Activity LED (Right Side)	
Color	**Meaning**	**Color**	**Meaning**
Off	No Link	Off	No Activity
Amber	10 Mbps	Amber	Half-Duplex
Green	100 Mbps	Green	Full-Duplex

Using Data Capture
Data Capture Program – Ethernet Connectivity

Installation and Users Guide
Version 4.2.4

General Description

The Data Capture software downloads, organizes, stores, and clearly displays the data collected by any number of equipped Omega monitors located anywhere on the network.

Data Capture software can send email and sms alarm messages whenever a sensor goes out of programmed limits.

Data Capture Software stores each sensor's data in individual files that can be analyzed and graphed at a later time.

Model OMA-VM500-7-DCP has on board data logging. For this feature to function the date and time must be set. See page 9 for details.

Software Requirements

Windows XP SP3 and above

Installation

Download and install from ftp://ftp.omega.com/public/DASGroup/products/OMA-VM500_600/
Double click on setup.exe
Follow the directions on the screen.

Configuring Data Capture

After installing Data Capture, you should configure network and email parameters. From the main screen click on the **Setup** menu item and select **Configure Data Capture**, the Data Capture Configuration screen will be displayed.

Network Tab

The first parameter on this tab is the **Network Communication time out**. This value is the amount of time the software will wait for a response from the Server. Valid times are from one (1) to nine (9) seconds. If you are having difficulty in establishing communications with an Omega Server, try increasing this parameter. This parameter directly affects the response time of the program.

Enter the maximum amount of time to wait to for a response from an Omega Server, in seconds. The default is 2 seconds which should be adequate for most networks.

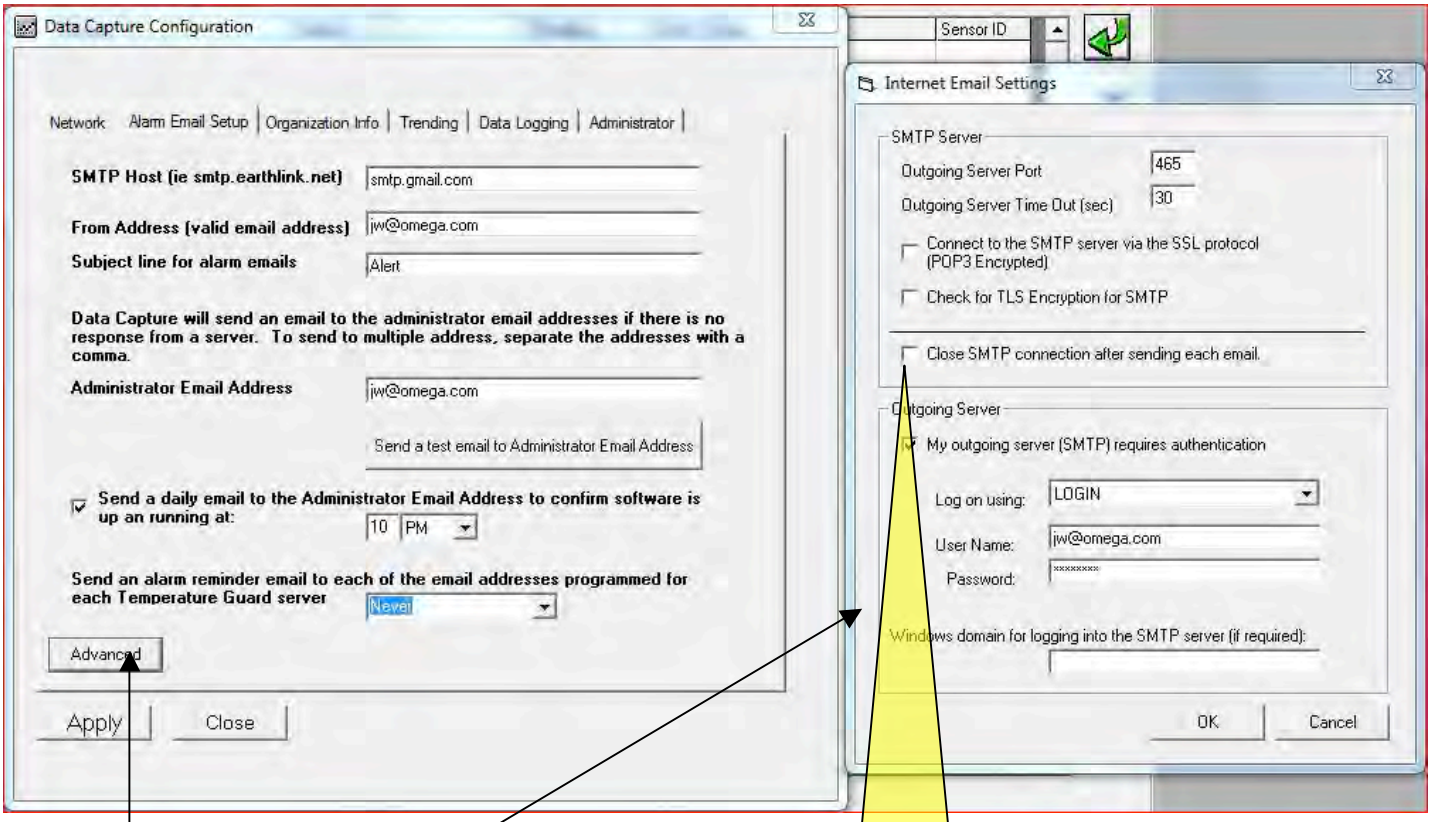
The second parameter is the **Number of times to try to communicate with an Omega Device**.

Enter the number of times to attempt to establish communications with an Omega Server before generating an alarm and sending out an email alert message stating that the Server is off-line. The default value is one time.

Alarm Email Setup

This tab has all of the parameters to configure the email account information. These values **must** be entered to enable any alarm emails. You can also enter an email address that is used to notify someone if an Omega Server fails to respond.

1. Enter the SMTP mail server parameters as necessary.
2. Enter a From Address.
3. Type in a subject line for outgoing alarm emails.
4. Enter an Administrator Email Address to send an alarm if a Server does not respond.
5. Click on the Test this email address button. Data Capture software will attempt to send an email to this address. Data Capture software will display a message indicating whether it was successful or not. If necessary enter a user name and password for your mail server.
6. Click on the **Advanced** button to access additional email server options. **We recommend that you contact your network administrator for assistance with these settings.**
7. **Click Apply** after any changes! Then click the *Send a Test* button.



Organization Info

The information you enter here is included in all alarm emails sent by the Data Capture software. Keep it short if you will be using Data Capture to send SMS messages.

Trending

To enable data trending, check the **Enable data trending** check box.

To view historical temperature data, click on the Trending tab on the main screen. The trending chart updates at the programmed "Update Rate". The chart is capable of displaying six hours of data at the programmed "Update Rate".

Data Logging

The value entered here sets the data update rate at which the software will collect and log the data from the programmed servers to the computer. Enter the desired update rate in seconds with 5 seconds being the minimum and 60 seconds being the default. In many cases, a reading every 60 seconds is too frequent, especially if you need to print the logs**. Plan ahead.**

Use this tab to set where the data log files are stored. The default directory is C:\Program Files\Omega\Data Capture. To change where the data log files are saved, click on the Change Log File Location button, navigate to the desired location and click the OK button. The new location will be displayed. Click the Apply button to save.

Administrator

To prevent unauthorized access to Data Capture Setup and Configuration screens, enter a user name and password and then click the Apply button.

To disable having to log in, click the Clear button and then click the Apply button.

Setting up a Data Collection System

When setting up a data collection system, the first thing that must be done is to obtain a static IP address and then set the Omega Server to this address. To set the IP address, run the **Omega IP Setup Program** found in the Omega/Data Capture program group under the Start menu. Instructions for the IP Setup Program are the first 4 pages of this manual.

Once the Omega Server has its static IP address, the next step is to add this unit to the list of Monitor Servers that the Data Capture software will collect data from.

Adding an Omega Server to the Data Capture software system

1. From the main screen, click on the **Setup** menu item and select **Omega Servers and Sensors**.
2. Click on the "**Add New Server**" menu item. This will bring up a screen to enter the server parameters.
3. Type in the IP address for the Server.
4. Click the Test Communications button. Click OK.
   This will test that the IP address is a valid IP address.
   Data Capture will also communicate with the device to determine the appropriate model and any current name that may be programmed in to the device.
5. Type in a unique name for the Server. The maximum length of this name is 20 characters.
6. Type in notes on the Server, such as where it is located. These notes will be included in alarm emails.
7. Verify that the Monitor is powered up, and then click the **Test Communications** button. The Data Capture software will attempt to communicate with this server and will display a message indicating success or failure. If the Data Capture software fails to communicate with the server, verify the IP address and that the server is powered up.
8. To have the Data Capture software start logging data from this server, check the **Enable this Server** check box.
9. Click on the **Alarm Email Addresses** button to add email addresses to send alarm emails to. Detailed instructions on how to add email addresses follows.
10. Click on the **Save** button. Settings will uploaded to the Omega Server. If it is successful, the Omega Logo will be displayed. If it is not successful, the symbol will be displayed and the **Enable this Server** will be unchecked. If this occurs, try clicking the **Save** button again.
11. Once the data is successfully uploaded, it is time to add the sensors that will be connected to the Omega Server.

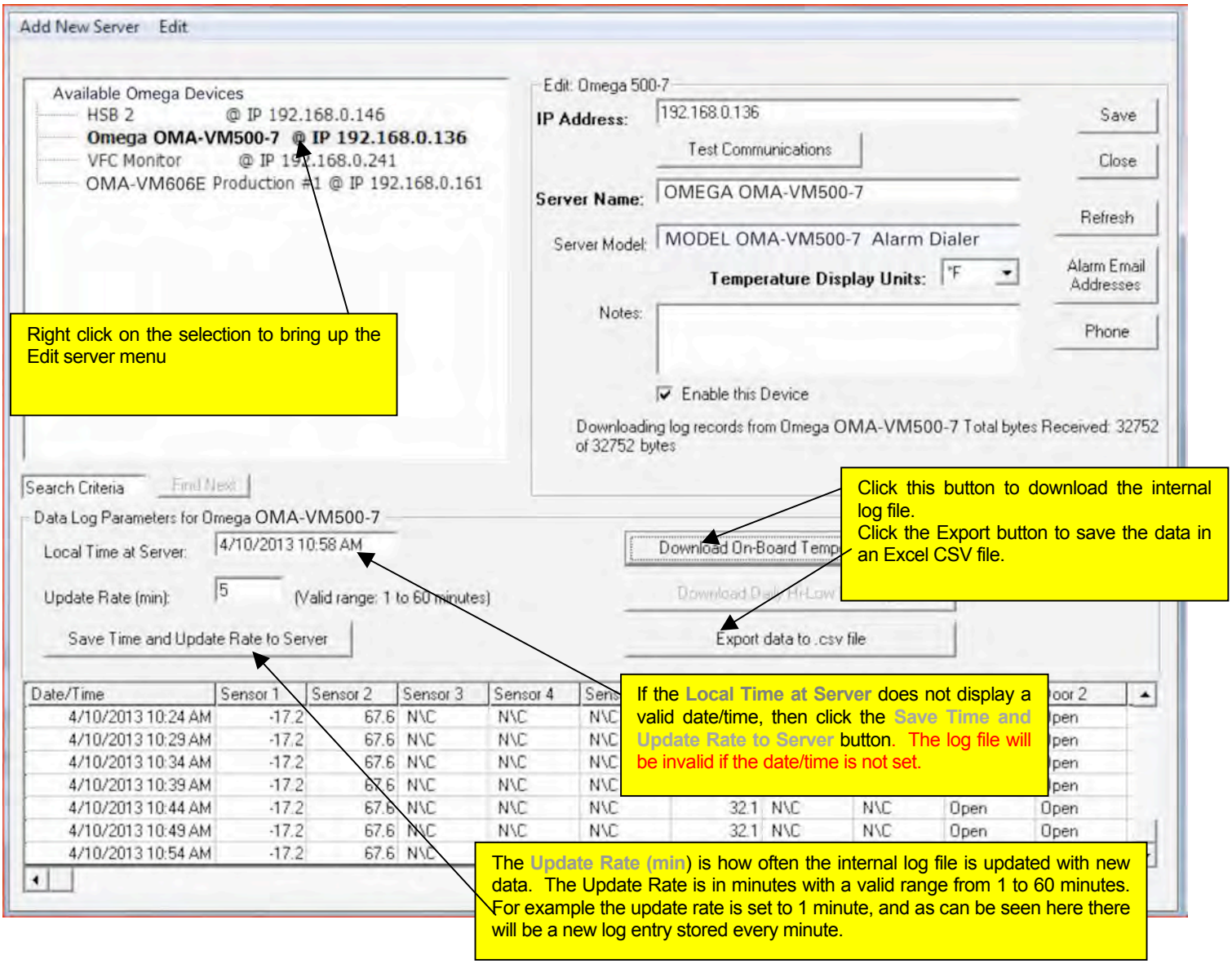
Models with onboard data logging Currently OMA-VM500-7-DCP

Servers with onboard data logging automatically logs temperature data, door status, power status and a date and time stamp at a programmable rate in it's internal memory. Data Capture can download the data for graphing or export to Excel for analysis. This information can also be accessed by the server's webpage, simply type in the servers IP address. (Example; http://192.168.0.25)

In the event of a power failure, these devices will run off of its internal battery and continue to log data until the battery power fails.

If the server you are adding has on board data logging, the following addition parameters will be shown.

1. From the main screen, click on the **Setup** menu item and select **Omega Servers and Sensors**.
2. Click on the server, then click the Edit menu item and then click Server. The form at the top of page 9 is displayed.



Local Time at Server: The date and time is downloaded from the server. To correct the date and time, click the **Store Data Log Parameters** button. The date and time is obtained from the PC's system clock and uploaded to the server along with the log update rate.

The date and time must be set for the internal log file to be used.

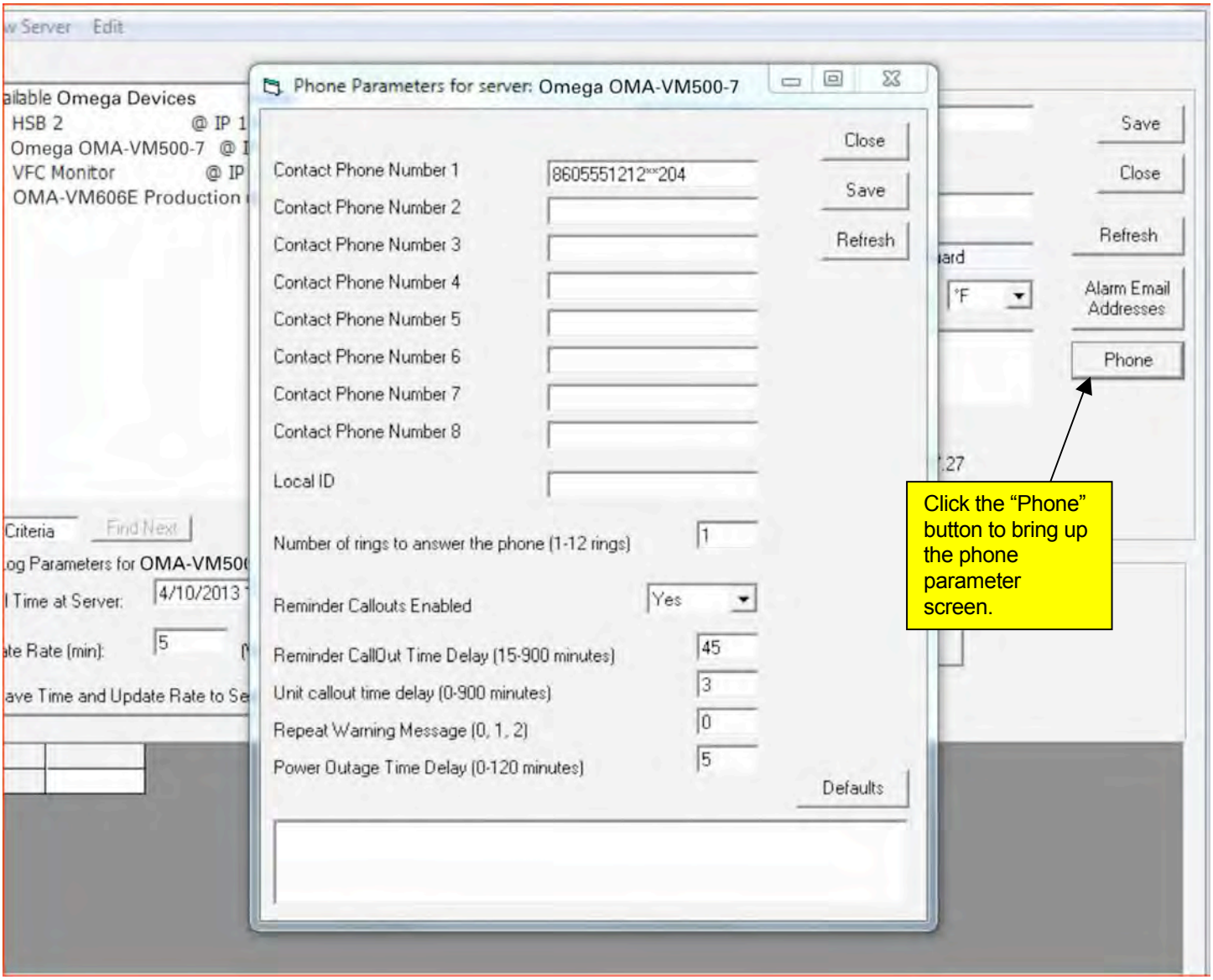
Log Update Rate: Enter a value for the Log Update Rate from 1 to 60 minutes and then click on the **Store Data Log Parameters**.

Model	Number of Records	Amount of data with a 1 Minute Update Rate	Amount of data with a 60 Minute Update Rate
OMA-VM500-7-DCP	1424	23.7 hours	60 days
OMA-VM606E	N/A	N/A	N/A

To download the on board data log file from the Omega server, click on the **Download all log records** button.

Programming phone parameters

For models shipping after 3/21/2010 you can use Data Capture to program phone numbers and callout configuration parameters. See the operating manual for details on specific parameters.



Adding and Deleting Alarm Email Addresses

You can create a list of "alarm" email addresses for each Omega Server. Whenever a sensor connected to this Omega Server goes out of limits, everyone on this list will receive an email. The email will state the sensor that is out of limits and how long it has been out of limits.

1. From the main menu click on the Setup menu item.
2. Click on the Omega Server you want to add email address for.
3. Click on the **Edit Server** button.
4. Click on the **Alarm Email Address** button.
5. Type the email address in the text box and click the **Add** button.
6. To test the email address, click on the address to select it, and then click on the **Test** button. Data Capture will send a test message to the selected address.
7. To delete an email address from the list, select the email address to be deleted, click delete. **Click close, then click save on the Edit Server page.**

Adding Sensors

Now that you have added an Omega Server to the list, it is time to add the sensors that you will be connecting to the Omega Server. You will also be programming the alarm limits for each sensor you add. The sensor name and limits are stored in the server as well as the Data Capture database.

For temperature sensors, a limit is defined by an upper limit, a lower limit and a time delay (in minutes). When a sensor exceeds a programmed limit for the programmed amount of time, the Omega Server turns on its buzzer and makes alarm telephone calls and the Data Capture Software will send alarm emails and sms messages if programmed.

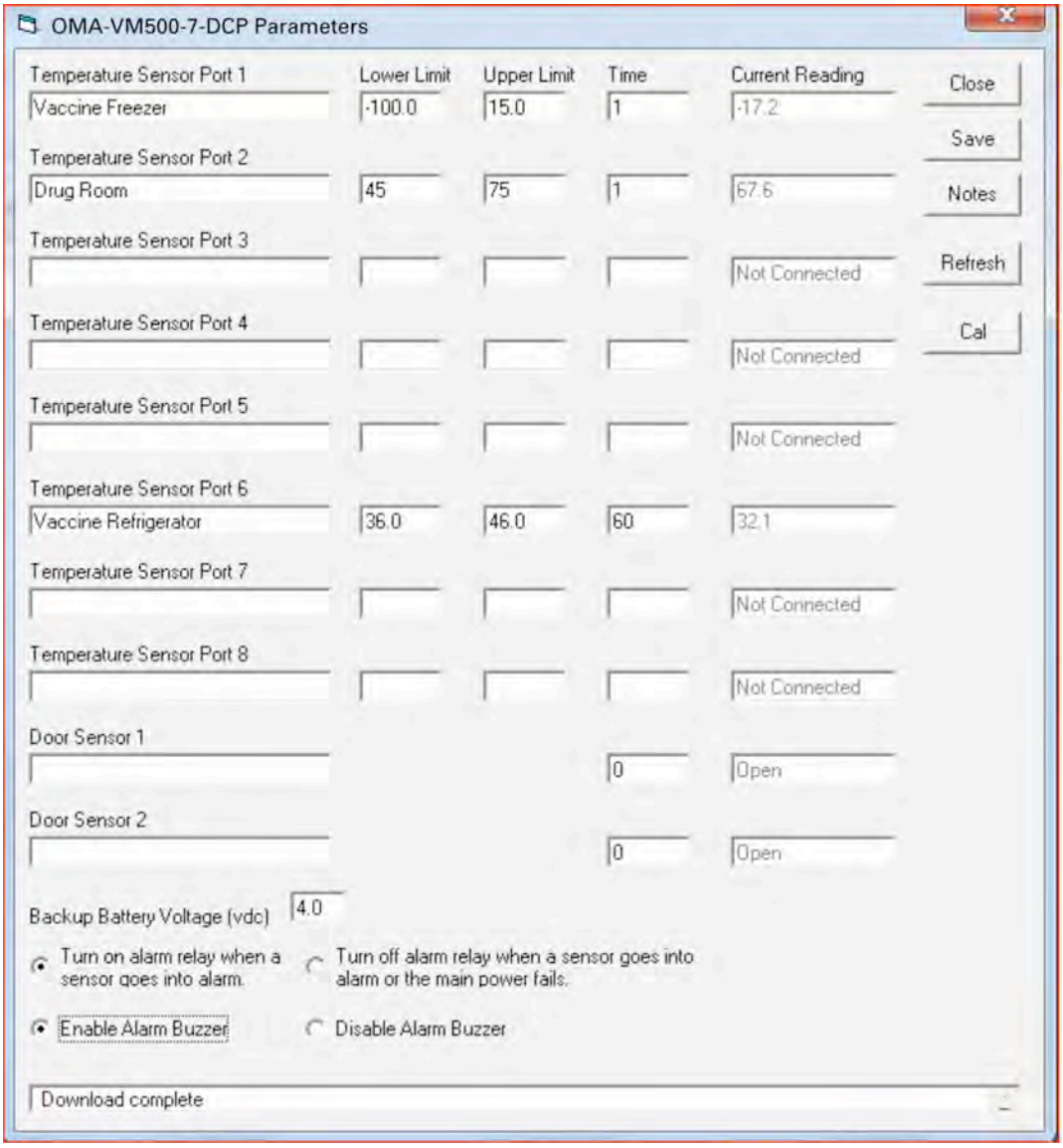
For dry contact inputs, only a time delay is required. An alarm is generated after the input is active for the time delay.

1. Right click on the Omega Server and select Edit Sensors.
2. Data Capture will download and display all sensor parameters.
3. For each sensor, type in a name and the appropriate alarm limits.
4. Click on the **Notes** button and type in notes will be included in alarm emails. The notes should describe where the sensor is located.
5. Click on the **Save** button to upload the parameters to the server.

Repeat this process for all of the sensors connected to this Omega Server.

For the OMA-VM500-7-DCP

The OMA-VM500-7-DCP has two additional programmable options.



1) Alarm Relay: The action of the alarm relay can be set to one of two options. Please note that the relay can only be turned on when the main power is on.

Option 1: turn the alarm relay on when an alarm occurs.

Option 2: turn the alarm relay off when an alarm occurs or the main power fails. When the OMA-VM500-7-DCP is powered up, the relay is turned on.

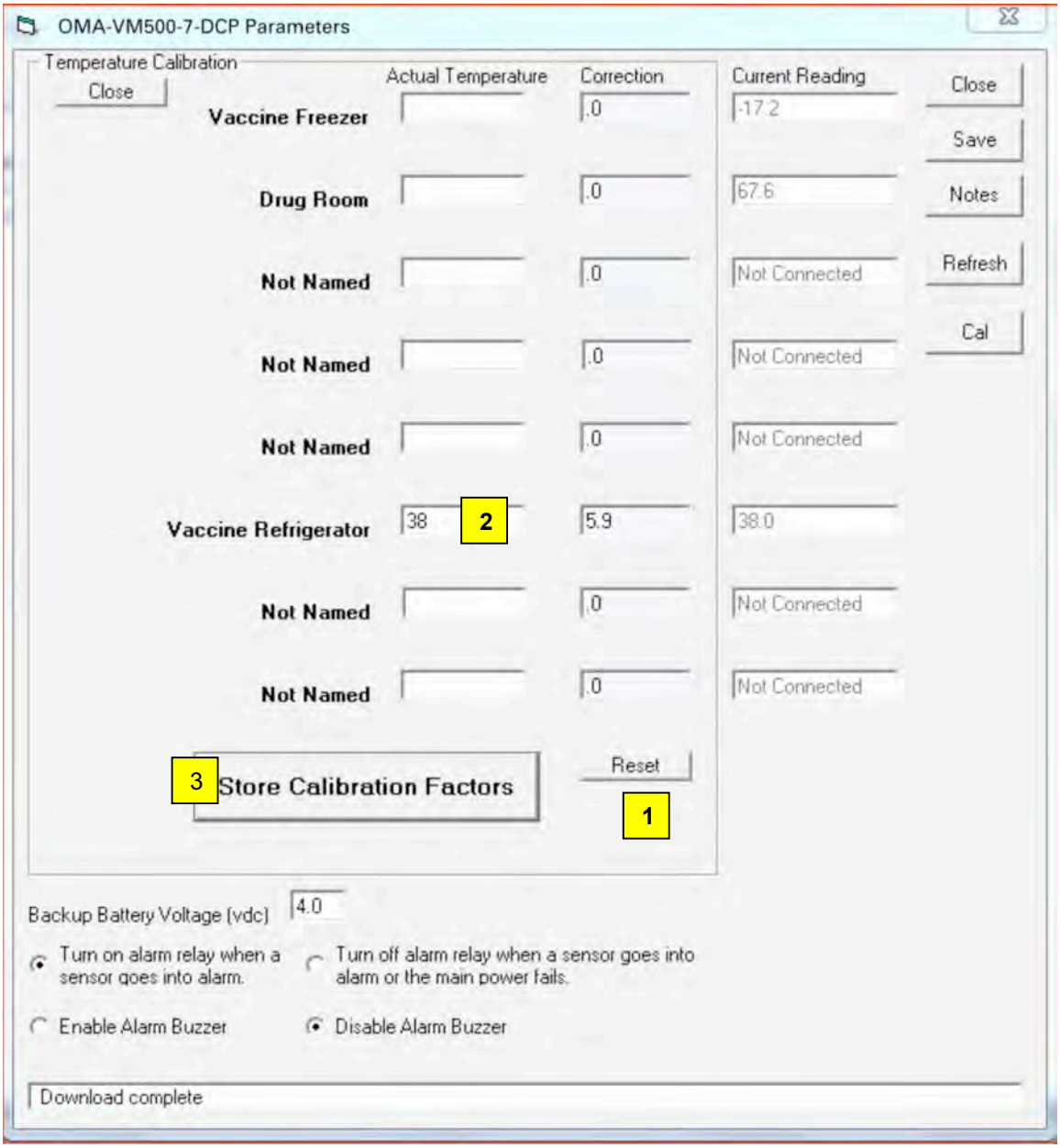
2) Enable Alarm Buzzer: To have the internal buzzer sound when a sensor goes into alarm, select Enable Alarm Buzzer. To prevent the buzzer from sounding, select Disable Alarm Buzzer.

This screen also displays the internal backup battery voltage.

Field Calibration for OMA-VM500-7-DCP

These models can be field calibrated at a single point.

1. Right click on the Omega Server and select Edit Sensors.
2. Data Capture will download and display all sensor parameters.
3. Once the sensor parameters are downloaded, click on the **Cal** button to display this screen.



Performing Calibration

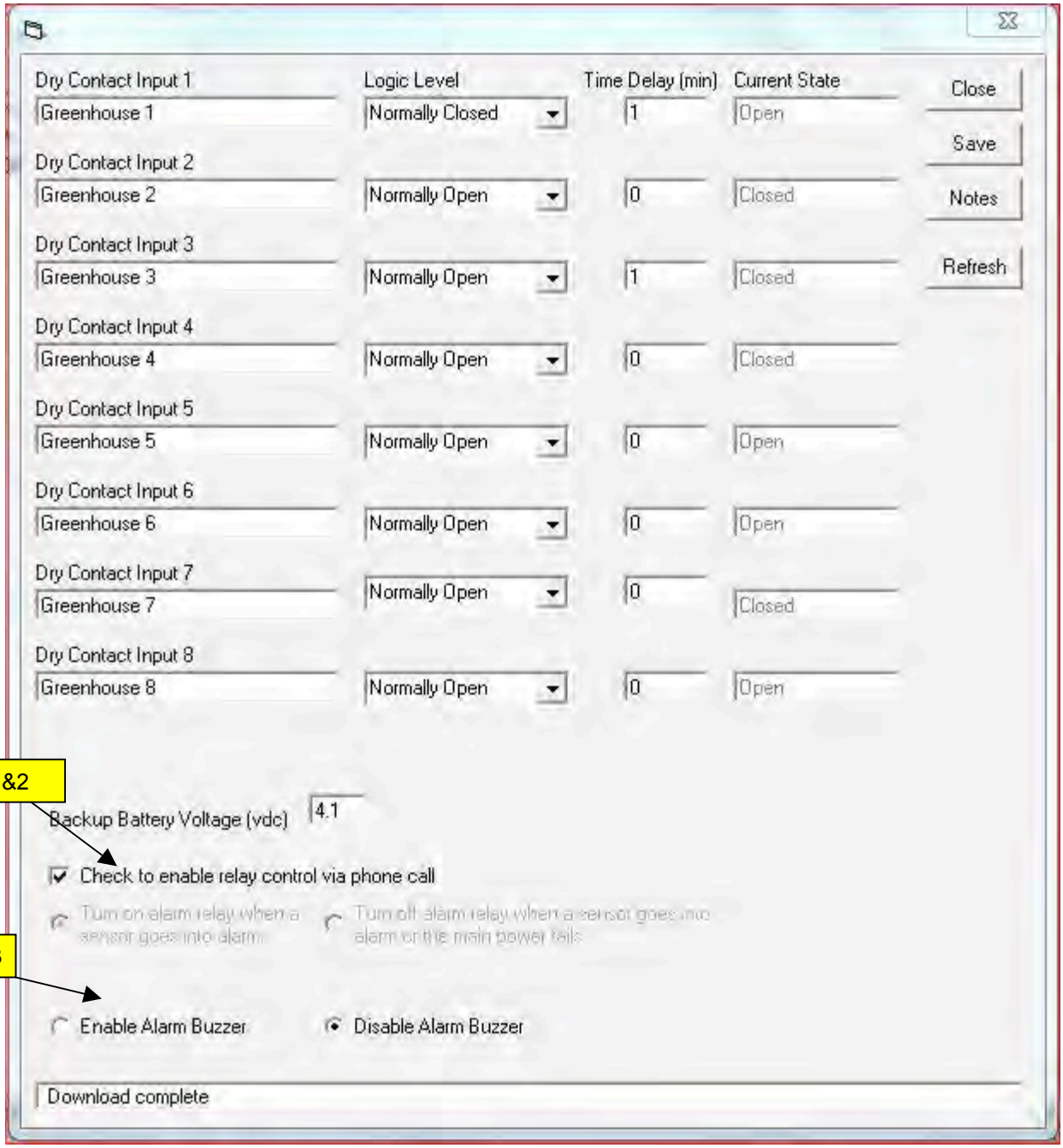
1. Click on the Reset button to set the correction factors to 0.
2. Enter the actual temperature obtained from a calibrated source.
3. Click on the **Store Calibration Factors** button. Data Capture will upload the correction factors and then refresh the sensor data. The current temperature reading will reflect the new correction factor.

Resetting the correction factor

1. Click on the Reset button to set the correction factors to 0.

For the OMA-VM606E Alarm Dialer

The OMA-VM606E Alarm Dialer has two additional programmable options other than the Inputs.



1) **Alarm Relay**: When "Check to enable relay" is unchecked (default) the relay will change state with the alarm. When the "Turn off alarm relay…" radio button is selected, the relay will go from energized to de-energized during an alarm. When the "Turn on alarm relay…" radio button is selected, the relay will go from de-energized to energized during an alarm.
2) When "Check to enable relay" is checked the relay is now controlled by the main phone menu. See the phone manual for details.
3) **Enable Alarm Buzzer**: To have the internal buzzer sound when a sensor goes into alarm, select Enable Alarm Buzzer. To prevent the buzzer from sounding, select Disable Alarm Buzzer.
   This screen also displays the internal backup battery voltage.

Alarm Events and Resolution Entry

To view alarms, click on the **Events** menu item. Alarms are displayed in the large text box in descending order and can be scrolled through using the scroll bar beneath the text box. To add a resolution comment, click on the **Enter Alarm Resolution** button, type in the comment and click **Save.**

To generate reports on the Omega servers and sensors as well as alarms, click on Reports in the Data Capture Program Group.

Generating Charts with Data Capture Graphing

You can create and print out charts for any sensor that Data Capture has collected data. The charts are generated from binary data files that can not be altered or tampered. All log files are stored in the Omega\Data Capture directory.

1. Click on **Data Capture Graphing** in the Omega program directory.
2. A drop down list is filled with all of the available log files in the Omega directory. From the drop down list, select the sensor you want to generate a report for*****. In general choose a file labeled "All Data" not "Averaged Readings"******. If the log files are located in a directory other than the Omega directory, click on the **Browse For Log Files…** to locate them.
3. Select the starting and ending dates on the two calendars.
4. Select whether to generate a graph or export the data to a CSV file.
5. Click on the Go button.

***Data Capture creates a new log file for every sensor every month.**
**** The log files labeled "Averaged Readings" take all logs files, and give a calculated average over a 1 hr. period. These are not actual readings!**

NOTES:

MADE IN USA

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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