

## Synergy Controller Alarm History



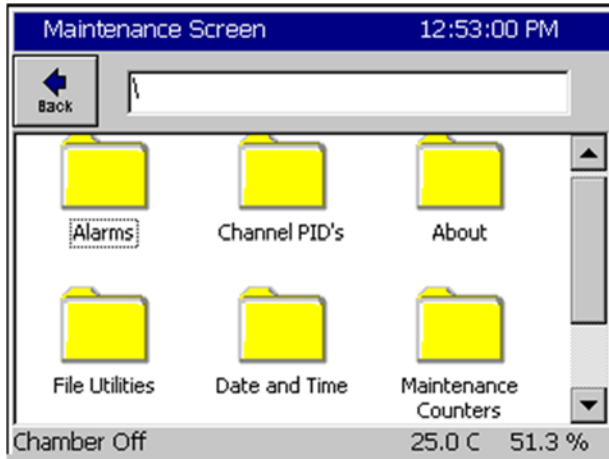
### Introduction

Tidal Engineering's Synergy Controllers, including the Synergy Micro 2, Synergy Quattro, and the 1/4 DIN Synergy Nano provide state-of-the-art usability and connectivity for environmental test control and data acquisition. They combine the functionality of a chamber controller and a data logger and are designed to improve test efficiency by supporting both factory automation and test and measurement protocols and standards. With the flexibility afforded by their multiple communication ports; Ethernet (10/100 Base-T), GPIB/IEEE 488, and RS-232, these controllers are perfect for today's dynamic testing environments.

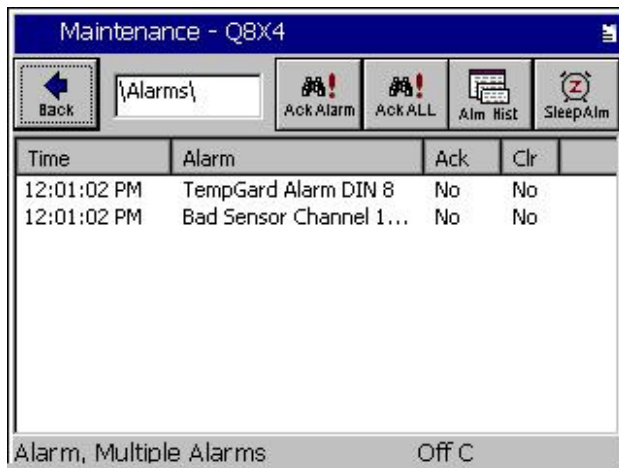
Starting in Version 5.3.x the Synergy line of controllers has made improvements to the Alarm system, including a new Alarm History as well as the ability to Sleep non-critical alarms. This application describes these features.

## Alarm History

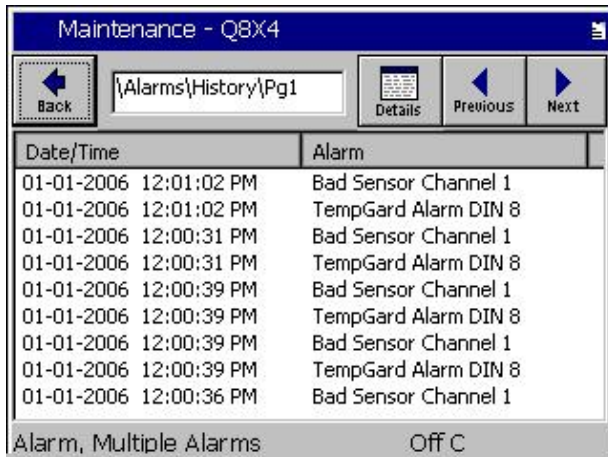
The Alarm history feature maintains a list of all current and past alarms, even after they are cleared and are removed from the Alarm screen. Historical details, such as the time of the alarm, the time it was acknowledged, the time the alarm was cleared, and the state of the system at the time of the alarm. To Access the Alarm History, first browse to the Maintenance screen, and click on Alarms



Once in the Alarm Screen, pressing the button labeled **Alm Hist** will bring up the Alarm History screen and related details.



Once in the Alarm History screen, there are navigation buttons on top, and a list of alarms below.



The navigation buttons on the top of the screen consist of the following:

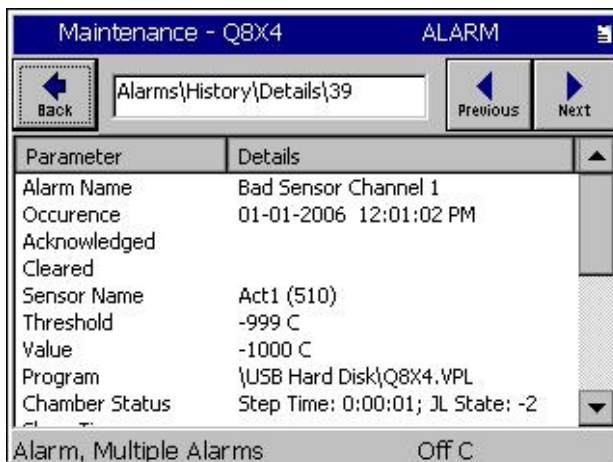
**Back** – This button will close the Alarm History window and return to the Alarm Screen

**Details** – This button will load the details for the currently selected alarm

**Previous and Next**– Only 9 alarms are displayed on-screen at one time. The Previous and next button will cycle through pages of Alarm History.

The Alarm History list shows two columns: Date/Time of the Alarm, and the Alarm string. Clicking on one of the column headers will resort the list (between ascending and descending) for that column. You can sort by either the Date/Time column or by the Alarm column to assist in looking for occurrences of specific alarms (or alarms which occurred at a specific time). By default, the Alarm History list is sorted by Date/Time, with the most recent alarms first (the Date/Time column is in a descending order).

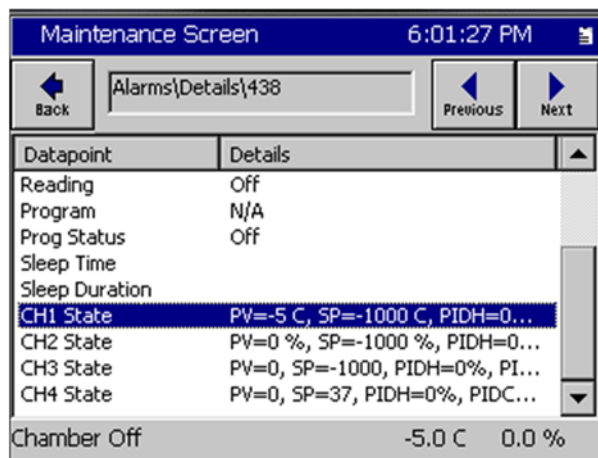
To see details of a specific alarm, double click on the alarm, or click on the alarm and click on the **Details** button. This will bring up the alarm details screen.



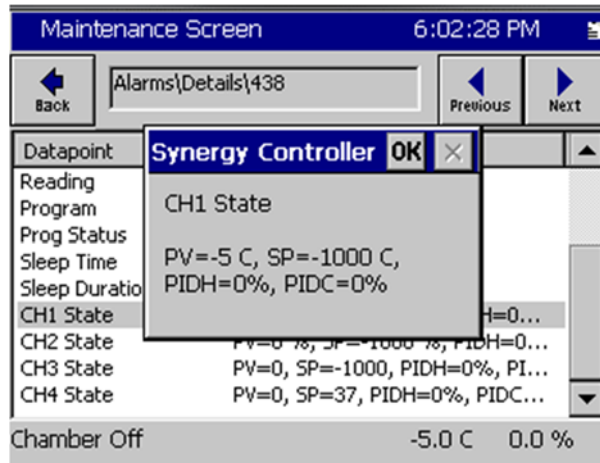
On the Alarm Details screen, the Back button will take you back to the Alarm History screen. The Previous and Next buttons will cycle through the alarms in the list. The Previous button will select the next alarm higher in the list, and next will select the alarm below the current alarm.

In the details portion of the screen, are two columns. The left column labeled Datapoint, describes the data displayed in the right-hand column, Details. At the time of this application note, the following details are recorded (if they occur) for each alarm:

- Alarm Time – This is the time the alarm initially occurred
- Cleared Time – This is the time the alarm condition went away (not necessarily the time the controller came out of alarm mode if it was waiting on an acknowledgement)
- Ack Time – This is the time a user acknowledged this alarm.
- Threshold – This is the threshold reading which triggers this specific alarm
- Reading – This is the reading which was beyond the threshold, and which resulted in the alarm occurring
- Program – This lists the profile which was loaded or running at the time of the alarm
- Prog Status – This will detail if the profile was running, and what step and jumploop it was at when the alarm occurred
- Sleep Time – This is the time in which the alarm was put to sleep (and may be blank if the alarm was not put to sleep)
- Sleep Duration – This is how long this alarm was set to sleep for
- CH1 State, CH2 State, CH3 State and CH4 State – These list the state of each respective channel in the controller, including Process Variable, Setpoint, PIDH and PIDC settings at the time of the alarm.



Due to limitations on the screen size, not all data may fit on the screen. Double clicking on a detail line, will pop up a dialog window with the full details visible. Clicking OK will close the dialog.



## Data Redundancy

The Alarm History data is stored in a primary and backup file on the Synergy Controller. The primary file is \Storage Card\DATA\almhist.txt. The backup file is \Storage Card\DATA\almhist.tbk. Both files are plain-text CSV files. There is no delay in writing to the Alarm History file, and the backup file. Data is written as soon as it is recorded.

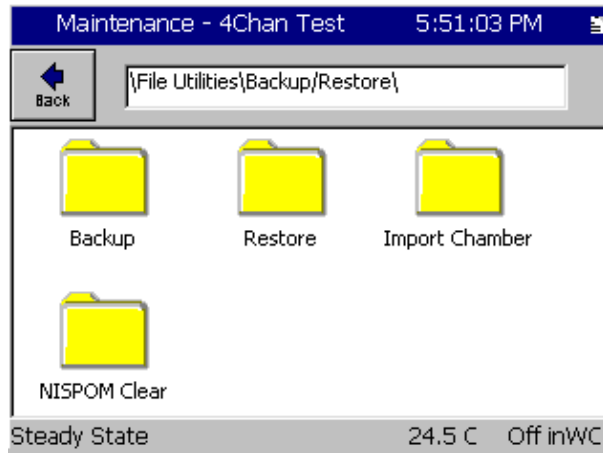
At startup, the primary is loaded first. If there is an error loading or reading the primary file, the backup copy is loaded.

## Importing and Exporting Alarm History

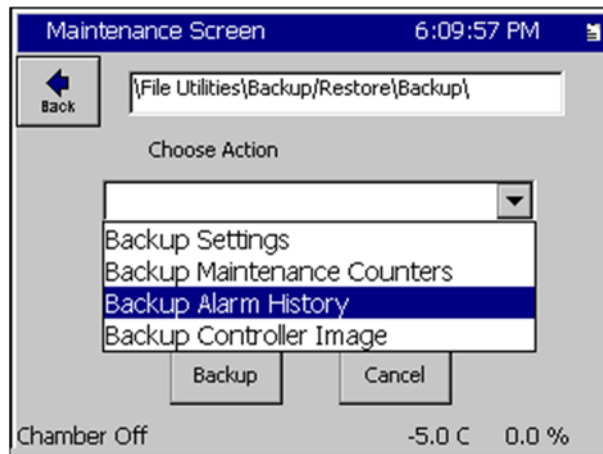
To import or export the Alarm History (such as for creating a backup, loading Alarm History data onto a new controller after a hardware change, etc.), Users must access the Backup and Restore functions under File Utilities on the Maintenance Screen. Go to the Maintenance screen, then click on 'File Utilities'. Then click on 'Backup/Restore'. The Backup and Restore options are then displayed on screen.

## Exporting/Backing up Alarm History

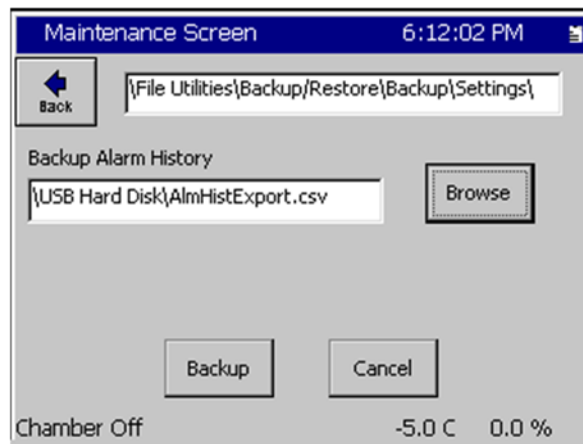
To export (or backup) the Alarm History, from the 'Backup/Restore' screen under the Maintenance Screen, click on Backup.



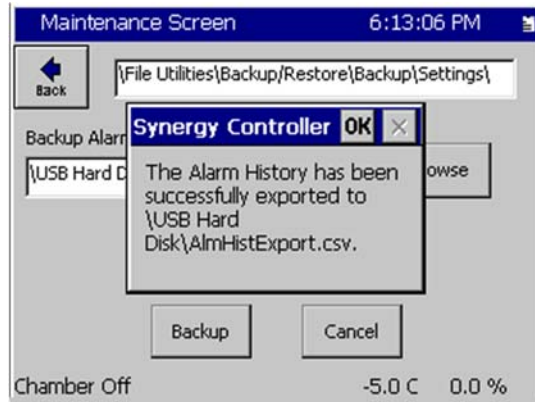
Once in the Backup screen, select 'Backup Alarm History' and press the 'Backup' button.



You will then be prompted to select a location to save the backup file. Select an appropriate location to backup the maintenance counters to (such as a USB drive).

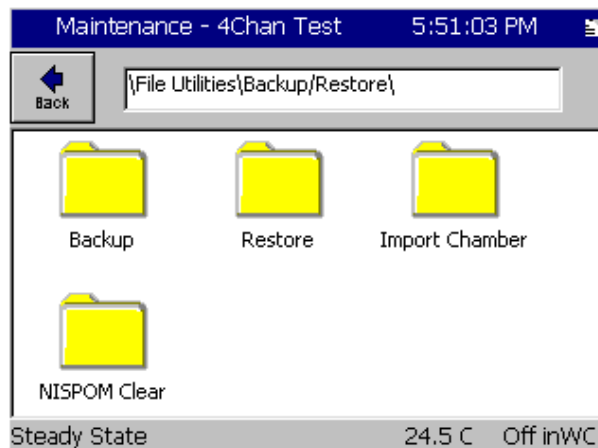


Once the backup location is selected, press the 'Backup' button to backup the alarm history. Once the backup is complete, a message will confirm the success of the backup. Store the backed up alarm history in a safe location.

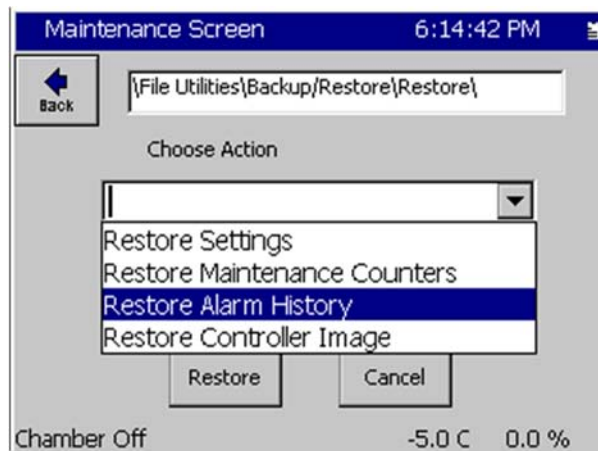


### Importing Alarm History

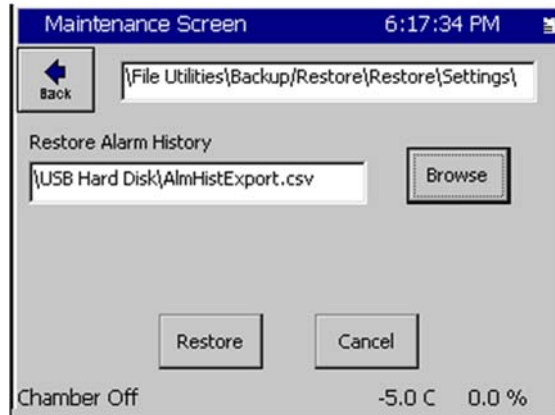
To import (or restore) the Alarm History, from the 'Backup/Restore' screen under the Maintenance Screen, click on Restore.



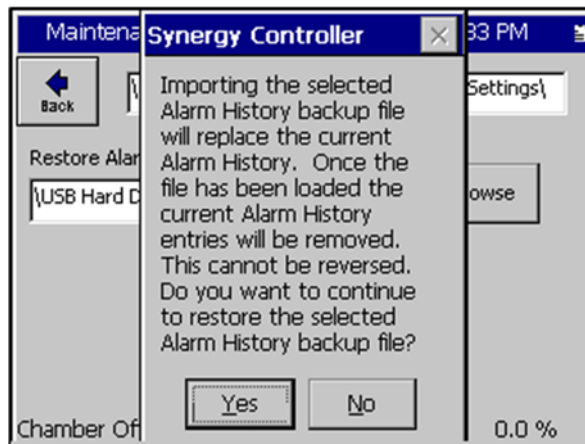
Once in the Restore screen, select 'Restore Alarm History' and press the 'Restore' button.



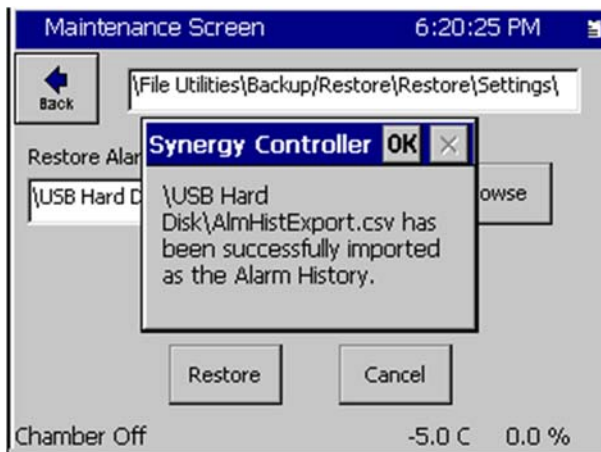
Select the file you wish to restore from, and then press the 'Restore' button.



A prompt will appear requiring the user to confirm they would like to restore the selected alarm history. The import will overwrite any existing Alarm History data. Click **Yes** to restore, or click **No** to cancel the operation.



A confirmation window will be displayed to confirm the loading of the maintenance counters from the selected file.







## About the Synergy Controller Family

Tidal Engineering's Synergy Controllers, both the Synergy Micro 2, Synergy Quattro, and the ¼ DIN Synergy Nano provide state-of-the-art usability and connectivity for environmental test control and data acquisition and combine the functions of a chamber controller and a data logger. These controllers are designed to improve test efficiency by supporting both factory automation and test and measurement protocols and standards.

Synergy Controller feature highlights includes:

- ➔ Color touch screen
- ➔ Ethernet, RS-232 and GPIB communications
- ➔ Built in 100 MB Data logger with USB drive support
- ➔ Data Acquisition, up to 64 T-type thermocouples (Optional)
- ➔ Built-in Web Server for remote control; WebTouch Remote™
- ➔ Compatible with Synergy Manager for PC based control, monitoring and programming.
- ➔ Built-in FTP Server for factory automation and test and measurement applications

For more information regarding these controllers please see the full Synergy Controller Technical Manual on our website at <http://www.tidaleng.com/synergy.htm>

## About Tidal Engineering

Headquartered in Randolph, NJ, Tidal Engineering Corporation has been designing and building award-winning embedded hardware and software for test and measurement and data acquisition applications since 1992. The company is recognized for technical expertise in such areas as Embedded IEEE 488, and turnkey SCADA (Supervisory Control and Data Acquisition) systems.

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