



H-3185SD CONTROLLER OPERATING INSTRUCTIONS

Version 1.0.0
5.20.2008





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INTRODUCTION

The HM-3185SD controller uses on-off control of heating and cooling devices to cycle between two temperatures. Testing cycles will continuously run between a freeze and thaw temperature for up to 99 cycles. The controller is designed to be wall mounted near the Freeze/Thaw machine and runs on 125 VAC power.

HM-3185SD Features

- Set temperature min/max for cycles.
- User selected number of cycles.
- Digital display with touch-screen interface for easy navigation.
- Customizable tests.
- Real-time, on-screen testing with graphing.
- Previous test data can be reviewed, which includes tabulation and graph views.
- Export test data to PC using Windows Hyper Terminal or using the Humboldt IR download software.
- Connect to the Freeze-Thaw cabinet remotely for control and/or observation.

NAVIGATION

The HM-3185SD features a touch-screen interface for easy navigation. To navigate, just press on any of the on-screen buttons located on the touch-screen. It is that easy. Data entry is handles by displaying an on-screen keyboard that will behave just like pressing a button on the screen.

The buttons below the screen are mapped to any buttons on-screen that are on the bottom of the screen. These are the only buttons the (row of 5 keys below screen) that will act similar to pressing an on-screen button.

INITIAL CONTROLLER SETUP

Please follow the following instructions precisely to insure a proper setup and prevent damage you your Freeze/Thaw unit.

1. Mount the controller box securely on a wall nearest to the Freeze/Thaw cabinet, but away from water or extreme moisture.
2. Plug in all electrical devices on the cabinet such as heaters, cooling system compressor, fan, and mechanical thermostat to the socket at the bottom of the controller box. All electrical connections have twist to lock plugs that easily attach to the controller box. Each connection is different and no two connections can be confused.
3. Open the door to the controller box and check the toggle switches inside the controller box. If they are switch off, switch heater, cooler, and fan to the ON position.
4. Make sure the wall outlet plug in the cabinet is securely in socket. This can shift or become loose during shipping.
5. Plug the main power cord from the controller box into an appropriate receptacle. The controller requires a 125V AC, 30 amp power source.
6. The main circuit breaker is located on the side of the controller box near the door latches. Switch the breaker to the ON position.
7. Wait for the controller to initialize, after initialization you should be ready begin using your freeze/thaw machine.

CONTROLLER SCREENS AND NAVIGATION

The next section will cover the controller screens if you need instructions understanding Navigation, please see Navigation instructions.

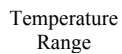
Initial Test Screen

This screen is your hub to access other parts of the software. This is the screen we will begin all screen instructions.

Run Test Screen

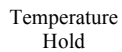
This section will describe how to setup/run a test as well as navigation and what each button does.

From the main screen press the  button.

Temperature
Range

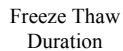
Temperature Range

- Use this to adjust the desired freeze temperature and thaw temperature.

Temperature
Hold

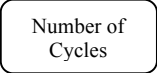
Temperature Hold

- Use this to adjust the desired time to hold the temperature at either of the temperature boundaries. Time is entered in minutes.

Freeze Thaw
Duration

Freeze-Thaw Duration

- Use this to adjust the desired time to freeze or thaw. Time is entered in minutes.

Number of
Cycles

Number of Cycles

- Set the number of cycles the test will run.

CONTROLLER SCREENS AND NAVIGATION (CONTINUED)

Run Test Screen (Continued)

Def. Setup

Pressing this button will reset setup to Default Setup.

Run Test

Pressing this button will start the test. Any previous test data will be erased.

Back

Pressing this button will take you back to the main screen.

Adjusting Values

When adjusting the Temperature Range, Temperature Hold, or the Freeze-Thaw duration, you will be prompted with a sub menu. Clicking buttons in the sub-menu will display a key entry pad that you can use to adjust values for the test setup. Press the back button to exit a sub menu. In the key pad screen press the ESC button to cancel entry or the OK button to commit an entry.

Default Test Values

Temperature Range: 0°F (-17.8°C) for Freeze and 40°F (4.44°C) for Thaw
Temperature Hold: 0 minutes for Freeze and 0 minutes for Thaw
Freeze-Thaw Duration: 90 minutes for Freeze and 150 minutes for Thaw
Number of Cycles: 25 cycles

CONTROLLER SCREENS AND NAVIGATION (CONTINUED)

Test Screen

This screen can be found in the Run Test screen.

The run test screen will show you a graph for as the current cycle it is on as well as the current temperature and current cycle status (Freeze or Heat Cycle). The test will stop when all test cycles have completed or the user presses the Stop Test button.

The graph will be automatically generated and is a graph of the current cycle, not the entire test. When a new cycle begins a new graph will display.

By default the test will record time and temperature every 5 minutes. This value cannot be changed.

Note: Multiple tests cannot be stored on the unit. Only one test at a time can be stored at a time. After each test you can export your data.

CONTROLLER SCREENS AND NAVIGATION (CONTINUED)

Previous Test Screen

Table

The previous test screen will allow you to view all the test data from a previously run test. Only 10 points can be viewed at a time, you can use the more and previous button in the tabulation view the next 10 points of the tabulated data.

Graph

Press the Graph button to view graph of tabulated data. The graph will be generated automatically and will be a single graph of all the cycles. Press the Table button to get back to the table view.

Export

Press the Export button to export the data to Windows Hyper Terminal or Humboldt IR Download. If using Humboldt IR Download please refer to the IR Download instructions for Exporting data.

COM Port Settings

Use these settings if exporting to Hyper Terminal or similar program.

Baud Rate: 19200
Data: 8 bit
Parity: None
Stop: 1 bit
Flow: None

CONTROLLER SCREENS AND NAVIGATION (CONTINUED)

Controller Settings

This section will describe the various settings of the H-3185SD controller.

From the main screen press the button.

Setup Screen 1

Set screen contrast

- Change the screen contrast here.

System Time

- Change the system time here.

System Date

- Change the system date here.

System Units

- Adjust the system units between English/Metric.

Pressing this button will take you to the next setup screen.

Pressing this button will take you back to the start screen.

CONTROLLER SCREENS AND NAVIGATION (CONTINUED)

Controller Settings (Continued)

Setup Screen 2

Indicate status of Freezer

- Press this button to toggle the freezer on/off.

Indicate status of Heater

- Press this button to toggle the heater on/off.

Network setup can be done here. Settings include IP address for the controller, Subnet, and Gateway. If you are having problems connecting to the device, verify your settings here or contact your network administrator.

To access the freeze-thaw machine from your PC, open a web browser and type in the IP address of the machine in the address bar of the browser.

Default Settings

IP Address: 192.168.0.11

Subnet Mask: 255.255.255.0

Gateway: 192.168.0.1

Pressing this button will take you back to Setup Screen 1.

On this screen you will also see the current temperature of the freeze/thaw cabinet.

About Screen

This screen displays information about the unit as well as what the units current IP address is.

From the main screen press the button.

TCP/IP SETTINGS AND WEB INTERFACE

The H-3185SD can be controlled remotely. This includes starting/stopping tests, viewing current status of unit, changing IP address of unit, and viewing test data. An Ethernet cable must be plugged into your local network to access these features.

TCP/IP

The Default IP settings of the unit are:

IP Address: 192.168.168.156
Local Net Mask: 255.255.255.0
Gateway: 192.168.168.168
Port: 80

Once connected to the unit via TCP/IP and a web browser click on the Administration item in the Main Menu. From here you can adjust the default IP settings to match your network.

The IP address is a static IP address, DHCP IP settings are not supported at this time.

The units current IP address can be found in the About screen. This screen can be accessed from the main screen on the unit and by pressing the About button.

TCP/IP SETTINGS AND WEB INTERFACE (CONTINUED)

Web Browser Interface

Test Status

From this page you can view the status of the unit, test status, current freeze/thaw state. You can also start or stop a test from this page. This page will automatically refresh every 10 seconds.

Test Data

From this page you can view all tabulated data from a test. Click on the Copy to Clipboard button at the bottom of the table to copy data from the table to the PC's copy buffer. Press the refresh button to refresh any new test data.

Test Setup

From this page you can view/change the settings for testing. Note: Settings cannot be changed if a test is running.

Administration

From this page you can view/change the IP settings of the unit. Note: Settings cannot be changed if a test is running.

SERVICE

For any service issues, contact Humboldt Scientific, Inc.

Phone 1.800.537.4183 between 8:00 AM and 5:00 PM Eastern Time.