

# **Installation of Software Programs for the JC Systems Inc. ChamberLog™ Network.**

There will be two programs to install on your computer to run the ChamberLog™ system..

1. Insert the “ChamberLog -Win ‘95, ‘98 & NT disk into the CD drive.
2. From the Windows explorer, double click on Setup.exe

The Setup.exe program creates a directory (folder) “Chmblog” on drive C:\ with subdirectories (sub folders) under the C:\Chmblog directory (folder).

If you do not have National Instrument RunTime Engine installed on your computer, it must now be installed to run the ChamberLog Program.

Installation of National Instrument RunTime Engine 5.1:

Click on the Setup.exe file in the National Instruments RunTime Engine 5.1 folder located on the CD supplied by JC Systems.

Restart your computer.

## **MECHANICAL MOUNTING OF THE CHAMBERLOG™ PACKAGE:**

See last page for templet and mounting instructions.

Remove the cover form the ChamberLog box.

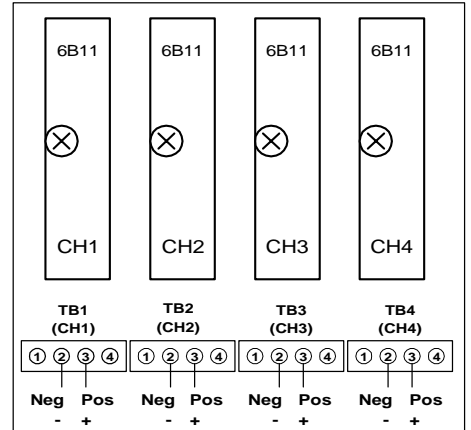
**POWER CONNECTIONS:**

Connect the power cord to a source of 115 Vac power. We suggest using an Un-interruptible Power supply for the Computer and the unit that acts as the repeater for the network. This can be either the JC Model 505 Level Shifter or the Model CL2001 ChamberLog. The CL2001 converts the computer's RS232 to RS485 thus acting as the network repeater. This keeps the data collection active in the event of a momentary loss of power or glitch on the line.

**INPUT CONNECTIONS:**

The input connections are made to each module that is to be utilized. The modules and terminal blocks are numbered left to right as shown in the drawings to the right and below.

Left to right: Module # 1 (Ch1) TB1, # 2 (Ch2) TB2, # 3 (Ch3) TB3, # 4 (Ch4), TB4.

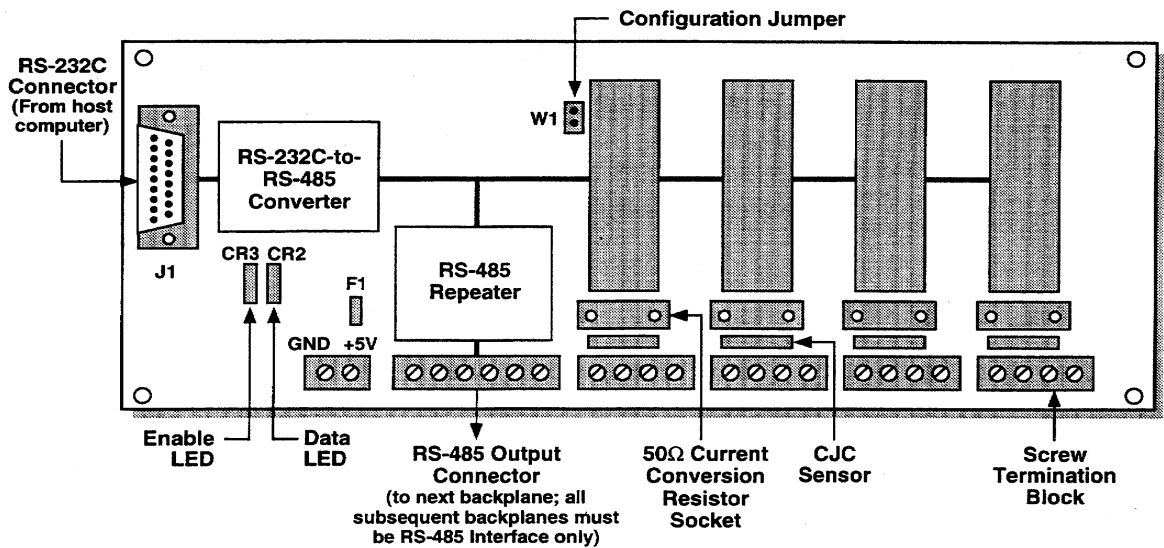


For type T thermocouple. Connect the blue lead (+) to pin 3. and the red lead minus (-) to pin 2.

**CL2001 (built in 232 to 485 converter):**

Connect the CL2001 to the computer with a RS 232 (nine pin female to 25 pin male) modem cable.

**NOTE:**

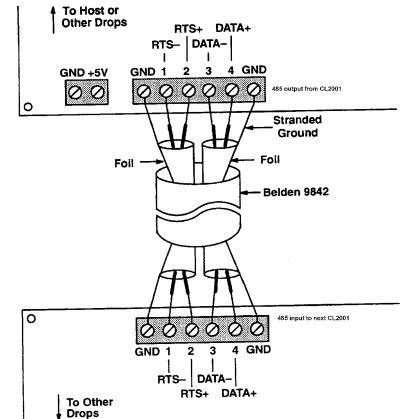
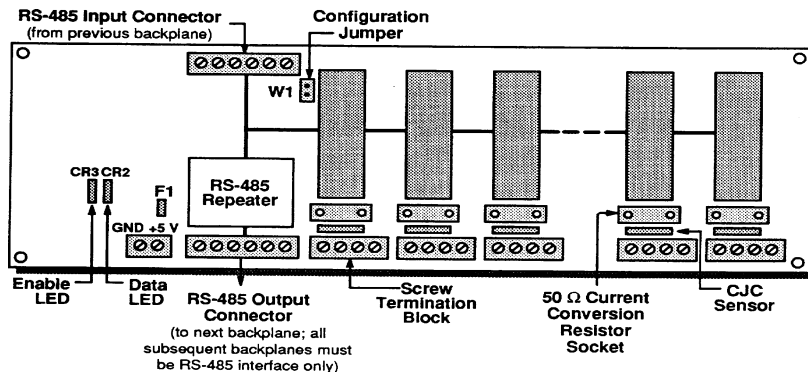


Do Not use a null modem cable in this application.

Screw in the Male 25 pin connector to the 25 pin female receptacle at the left of the module back plane.  
 Route the modem cable so it also comes out at the bottom of the Chamber log box.  
 Replace the cover after all connections have been made and the system is up and running.

**CL2002: (RS485 to RS485)**

Connect multiple CL2002 units as shown above using a 2 pair shielded cable (RS485).



**Running your system the first time:**

The program is started by running C:\chmblog\clog.exe.

We suggest that you make a shortcut icon in Windows Explorer and move it to your Windows desktop.  
 Start the computer and run the Clog.exe program.

The ChamberLog pop-up screen will appear with the yellow indicator message,  
 “Initializing Modules - Please be patient.”

After the Initialization is complete you should do the following:  
 Verify that the Port number (just to the left of the drive letter) is correct for your computer SETUP.

The default is port 1.

If your computer is set up for “ChamberLog use” of a port other than 1, you must go into the **GLOBAL SETUP** and change the port configuration as described below.



**SELECTING A DIFFERENT PORT #:**

Click on the green **SETUP Button**. The first level access Pop Up screen appears.

Click on the “**Push to enter the code**” button. The default access code is “0.”

This brings you to the **ChamberLog™ SETUP** Screen. From this screen you can change the file name, enter information about the test, set the alarm limits and select the Log Time interval.

Push the “**Change Hardware Configuration**” button. Located at the upper right of the SETUP screen.

Click on the “**Push to enter the code**” button. The default access code is “0.”

**Hardware Configuration Screen:** Click on the “**Push to change Global Factors**” button.

Click on the “**Push to enter the code**” button. The default access code is “0.”

You are now at the **GLOBAL SETUP** screen. Select the appropriate serial Port # on the second control from the top then click on the red “**push to save the selected settings**” button at the bottom of the screen.

**NOTE:**

The program will stop automatically.

Wait until the **black arrow at the top left** of the Pop Up screen **turns white** (approximately 8 seconds).

Restart the program by clicking on the “**white arrow**” (Start/Run).

The program will initialize and all active modules will display the correct values of their input signals.

**SELECTING A DIFFERENT DRIVE FOR DATA STORAGE:**

If you wish to utilize a different drive for data storage, such as a CD drive with a write once only CD, you must process the CD by running the

“Setup Data Disc.exe” program to create the proper folders on that disc.

The “Setup Data Disc.exe” program is found in the Chmblog folder.

**INDICATORS (LED):**

**Power Supply:**

The green power supply indicator is visible through the view hole located at the top of the cover.

This LED should be ON whenever the unit is plugged in.

**Module Backplane:** (Not visible through the view hole. Cover must be removed to view LED’s)

The Green (Enable) LED is “ON” whenever +5V is connected to the backplane.

The Yellow (Data) LED flashes when communication is taking place (only with program running).



# ChamberLog Disc Storage Usage

Time in seconds between readings				
	5 seconds	10 seconds	15 seconds	30 seconds
Single Chamber 3 1/2" floppy Storage Capacity	1.6 days	3.2 days	4.9 days	9.7 days
Single Chamber Write 1 CD Storage Capacity	694.4 days or 1.9 yrs.	1388.9 days or 3.8 yrs.	2083.3 days or 5.7 yrs.	4166.7 days or 11.4 yrs

For multiple Chamber Systems, divide Single Storage Capacity by number of chambers in system

# JC Systems Model CL2001 ChamberLog™ System

## **Description:**

The ChamberLog™ System is a Hardware/Software system that provides a viable alternative to circular chart recordings of test results. Each CL2001 (or CL2002) can have one (1) to four (4) independent isolated input modules, providing up to four monitoring/data logging channels.

Each ChamberLog unit can support One to four chambers.

The data is time date stamped and saved directly into a separate spread sheet file for each chamber.

Each input module can be configured to acquire readings for thermocouple and/or voltage or current values. Voltage or current require an optional precision resistor. RTD's use a different module. .

The data is time date stamped and saved directly into a separate spread sheet file for each chamber.

## **Real Time Chart:**

A RealTime Chart is displayed on the computer screen with a default update rate of 5 seconds.

You have the option of displaying or removing the chart from the main operating screen.

Any active Chamber can be selected for viewing. When a new chamber is selected the real time chart will immediately begin to display the information for the selected units active modules.

## **Separate Spreadsheet files generated for each chamber:**

Instead of using a circular chart plot, test chamber results are kept as spreadsheet files on disk.

The "Graph A File feature" on the ChamberLog Display screen allows for instant viewing of any spreadsheet file as a graph for any chamber being datalogged.

The test results files can be easily analyzed, printed and/or graphed using spreadsheet programs such as Microsoft Excel or Corel Quattro Pro.

Column headers are automatically inserted at the top of each column and information about the test item(s) is added to the spreadsheet. Time and date stamps are added to each spreadsheet entry.

The disc space usage is 50 bytes total per Chamber for each reading.

One ChamberLog Unit will accommodate four (4) separate chambers if each Chamber needs only 1 channel of recording. Two channels of recording per chamber results in two (2) Chambers per ChamberLog Unit.

## **Guarantee Data Integrity:**

Tamper proof, secure file storage can be accomplished by installing a Read/Write CD on the network computer and saving the data to a Write Once CD.

## **Computer Requirement:**

A Pentium or better PC is required, running Windows '95, '98, 2000 or ME.

## **Three Serial Interface Network Options:**

There are three methods to establish the ChamberLog 485 network(s).

- (1) RS232** interface from the computer to the CL2001 as the first unit in the system.  
(The CL2001 is a ChamberLog unit with a built-in 232 to 485 converter.)  
The distance between the RS232 port on the computer and the CL2001 is limited to 50 feet.  
This unit acts as a network repeater and should be plugged into an un-interruptible power supply.
- (2) Direct RS485** interface from the computer (RS485 serial interface card installed in the computer).
- (3) Model 505 Level Shifter:** The Model 505 Level Shifter converts the computer's RS232 to RS485 for the ChamberLog network. The Model 505 should be located near the computer and connected to the computer's un-interruptible power supply.

## **Separate Independent Serial Networks and Programs for the ChamberLog™ and the JCS controllers.**

The ChamberLog™ System 485 Network is totally independent of any chamber controller network even through they exist on the same computer.

JCS Programmer controllers are not necessary for the CL2001/CL2002 ChamberLog™ units to operate but do provide an excellent 4-20ma source of temperature compensated humidity data when the controller is utilizing a sensor like the Vasila HM30.

Linear compensated 4-20ma sensors can be connected directly to a channel on the ChamberLog independently of any controller. The 50 ohm isolated input current measuring circuit of the ChamberLog can be connected in series with any linear compensated 4-20ma sensor at any point in its current loop.

## **ChamberLog™ only network:**

Only one (1) serial port is required when only the ChamberLog is being used in a system. This can be the computer RS232 to the CL2001 unit or the computer RS232 to the JC Model 505 Level Shifter. An independent RS485 interface card can also be installed in the computer. This requires that all ChamberLog units are the Model 2002.

## **ChamberLog™ and JC Systems Controller/Programmer combination networks:**

Two separate, independent RS232 serial ports are required in the computer. One (1) serial port for the ChamberLog (CL2001) or Model 505 (RS485) Level Shifter. The second is for the JCS Model 404 (RS422) Level Shifter for the Programmer/Controller network.

If the ChamberLog is using an independent RS485 computer card the Model 404 (RS422) Level Shifter will require one (1) RS232 Serial port.

# **The ChamberLog Program consists of the Main Display Screen, and three levels of “Setup and Configuration Screens”:**

## **Main Screen**

**1<sup>st</sup> level – ChamberLog™ Setup Screen**

**2<sup>nd</sup> level – Hardware Configuration Screen**

**3<sup>rd</sup> level – Global Factor Screen**

## **NORMAL USAGE:**

**Normal usage consists of viewing the main display screen for actual data readings, view chamber history (Graph a File) and going to the 1<sup>st</sup> level – ChamberLog™ Setup Screen.**

You will be utilizing the 1<sup>st</sup> level ChamberLog™ Setup Screen to:

**Select the file name for the datalog file for a selected Chamber:** Changing the name of the datalog file automatically opens a new file with the new name.

**Add information about the test in process** (which appears in the datalog file). This information is read into the datalog file one time when the file is made ACTIVE after being INACTIVE or when a new file is started. The column headers are also added to the file when it is made active or opened.

**Start or stop the logging of information to the datalog file** (Chamber ACTIVE or NOT).

## **New Installation:**

The individual input modules in each ChamberLog™ must have address and configurations assigned. This is based on your number of Chambers and data monitoring requirements. This setup is done at JC Systems before your ChamberLog unit is shipped per your order. A special program (Configure Modules.exe) is provided to allow you to change the module addresses and configurations should your needs change.

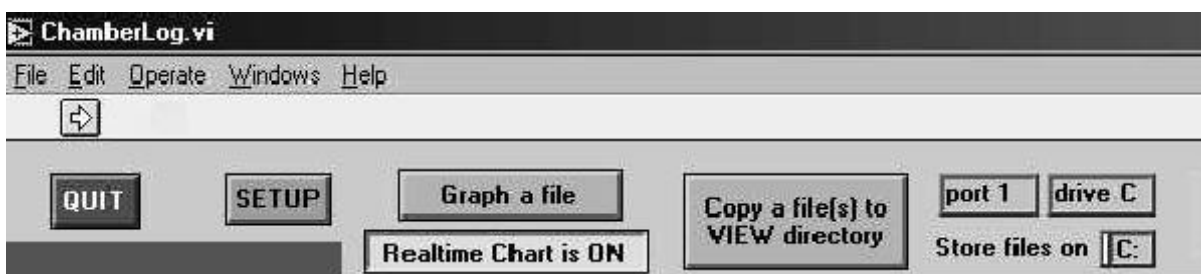
You must first setup the global factors (3<sup>rd</sup> level) and then configure the hardware (2<sup>nd</sup> level) before you can use the ChamberLog™ to display and gather data from your chamber network. This is done at JC Systems before your ChamberLog unit is shipped. You might need to change to serial port selection (default 1) to match that of your computer.



## MAIN SCREEN BUTTONS AND INDICATORS:



**Fig. 2 - MAIN SCREEN**



**QUIT:** Stops program. To restart the program click on the Gray button with the white arrow.

**SETUP:** Goes to the Access Screen for Level 1.

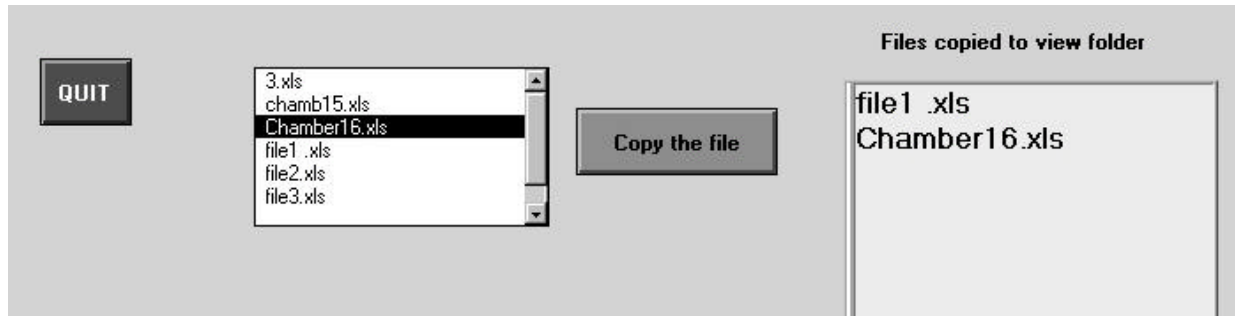
**GRAPH A FILE:** Provides a Pull Down Menu and selection of stored files to graph.

**REALTIME CHART IS ON (OFF):** Displays or hides RealTime Chart.

**COPY A FILE(S) TO VIEW DIRECTORY:** Lists the stored files that can be copied to the View folder. Files in the view folder can be opened from a spreadsheet program for graphing.

**CAUTION:**

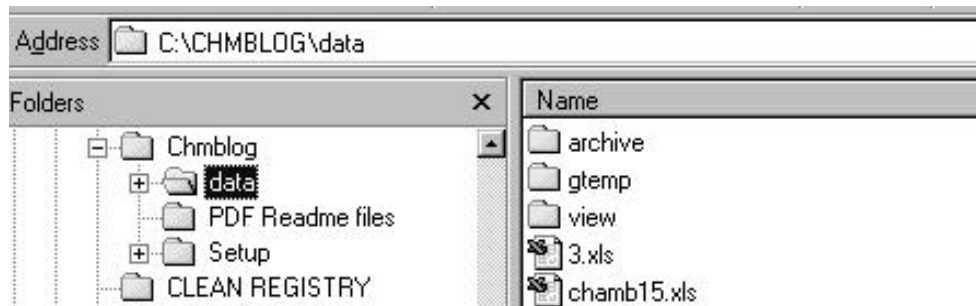
Do not open a file in the Data Folder with a spreadsheet program as you will interfere with the ChamberLog Program writing data to that data file. Use the “Copy a File(s) to the View Folder (Directory) and open the file of interest in the View Folder (Directory).



**REVIEWING SPREADSHEET FILES WHILE THE SYSTEM IS ACTIVE:**

**View Spreadsheets Graphically:** Any Spreadsheet file can be directly shown graphically for easy review without the use of a spreadsheet program.

Two file folders are included under the **Data** Folder for use with Spreadsheet Programs. They are: **archive** and **temp**.



Files can be moved from the **Data Folder** to the **Archive Folder** and a new file will automatically be created.

You can also copy a file from the **Data Folder** to the **Temp Folder** at any time and then review the file with a spreadsheet program.

**DO NOT OPEN AN ACTIVE FILE in the DATA FOLDER WITH A SPREADSHEET PROGRAM. THIS WILL CREATE AN ERROR. Instead, copy that file to the TEMP Folder then open it there.**

**PORT, DRIVE & STORE FILES ON:** Indicators showing the selections made in the Global SETUP.

**Active Indicator**

**Alarm Indicator**

**Value Indicators  
(CH1 - CH4)**

**Ack Button (Acknowledge)**

**Chamber Number**



**See Fig 2 - Main Screen**

**ACTIVE Indicator:**

A Yellow Active indicator is displayed for each ChamberLog unit selected as active. An active unit datalogs to the specified filename at its own time interval.

**ALARM Indicator:**

The Alarm indicator is located below the Yellow Active indicator and is only displayed if an alarm condition occurred and has not been acknowledged.

The Red Alarm indicator will turn “ON” if the High or Low limit selected in the Hardware Configuration for any channel is exceeded. The Red Alarm indicator will remain “ON” until the Orange Ack (Acknowledge) button is pushed..

**ACK (Acknowledge)Button:** Alarm Acknowledge button.

When the red Alarm indicator is on, pushing the Orange Ack button will result in one of the following:

Alarm condition no longer exists - the Red Alarm display disappears and the Ack button changes to a Yellow Alm button. On the next reading the button returns to Orange Ack state.

Alarm condition still present - and the Orange Ack button pushed.

The Red Alarm display disappears and the Orange “Ack” button changes to a Yellow “Alrm” button.

The Yellow “Alrm” will remain yellow as long as the alarm condition exists.

When the alarm condition clears, the Yellow Alm will change from back to Orange Ack following the next reading within limits.

**CHANNEL 1-4 Indicators:**

Displayed below the ALARM field. CH1 - CH4, top to bottom, display the current value for that channel in the units selected in the Hardware Configuration.

**CHAMBERLOG UNIT (CHAMBER) NUMBER:** Displayed below the Ack button.

### CHAMBER INFO. box: (Main Screen)

**FILE NAME:** Displays the “file name assigned” from Setup Screen.

**CHMBR NAME:** Displays the “Chamber name assigned” from the Hardware Configuration Screen.

**CH1 - CH4:** -- Displays the Channel Name selected in the Hardware Configuration Screen

**CHAMBER #:** Selects the Chamber to be displayed on the RealTime Graph.

The screenshot shows a window titled "Chamber Info." with the following fields:

- File Name:** Input field containing "another new file".
- Chmbr name:** Input field containing "chamber 1".
- Ch1:** Input field containing "Ch1 deg C" with a label "ch1" to its right.
- Ch2:** Input field containing "Ch2 deg F" with a label "ch2" to its right.
- Ch3:** Input field containing "Ch3 deg C" with a label "ch3" to its right.
- Ch4:** Input field containing "Ch4 deg F" with a label "ch4" to its right.
- Chmbr. #:** A dropdown menu with the number "1" selected.

See Fig. 2 (Main Screen)

## ChamberLog Setup Screen

The screenshot shows the ChamberLog Setup Screen software interface. The window title is "SetupSys.vi" and the menu bar includes "File", "Edit", "Operate", "Windows", and "Help". The main title is "ChamberLog™ Setup Screen" with "JC Systems, Inc." above it. There are two buttons: "EXIT" and "Change Hardware Configuration". The interface is divided into several sections:

- Chmb. Name:** A text field containing "Chmb1".
- Chamber #:** A dropdown menu showing "1".
- File Name:** A text field containing "TEST 1".
- Datalog Time:** A dropdown menu showing "10 sec.".
- Chamber active?:** Two buttons labeled "YES" and "NO".
- AutoDial ?:** A button labeled "NO".
- Alarm Limits:** A table with columns for "CH 1", "CH 2", "CH 3", and "CH 4". The "NaN = disable limit" is indicated above the table.
- Enter Comments:** A text field containing "Test 1".

	CH 1	CH 2	CH 3	CH 4
Chan. Name	Ch1 F	Ch2 F	Ch3 C	
Units	deg F	deg F	deg C	
HI	200	500	100	
LOW	-20	-150	-10	

**Chmb. Name:** Displays the “chamber name” for this chamber (assigned in the Hardware Configuration.)

**Chamber #:** Selects the Chamber.

**File Name:** The ChamberLog Setup Screen allows you to **enter the filename for the data file** that is automatically generated when the “Chamber is active.”

**Datalog Time:** Sets the time (in seconds) between writes to the data file.

**Chamber Active?:** Enable or disable the logging action for this chamber.

**AutoDialer:** This option is not currently available.

**Chan. Name:** Displays the Channel name assigned in the Hardware Configuration (col. Header in file).

**Units:** Displays the Channels units selected in the Hardware Configuration.

**Hi:** Enter the Hi Alarm value that will trigger the alarm state for each channel.

**Low:** Enter the Low Alarm value that will trigger the alarm state for each channel.

### Separate High and Low Limits (alarm monitoring) for each input channel

When the channel data exceeds its limit, a red ALARM indicator shows on the Main Screen.

The word ALARM with the channel number (1 to 4) is recorded in the data file along with the time and date stamp.

**Enter Comments:** You can enter information about the Device(s) Under Test, DUT. This information is automatically included as part of the header in the spreadsheet file

**Push to save displayed settings:** This button must be pushed for any changes to take effect.

The chamber number is automatically advanced when the settings are stored.

## HARDWARE CONFIGURATION SCREEN

The screenshot shows the 'Hardware Configuration Screen' with an 'Exit' button at the top left and a 'Push to save displayed settings' button at the top center. Below these, a note states 'Proper Chamber # must be selected:'. The main configuration area is divided into four columns for 'Ch 1', 'Ch 2', 'Ch 3', and 'Ch 4'. The 'Chamber #' is set to '1' and the 'Chamber Name' is 'Chamber\_1'. Channel 1 is configured with 'deg C' units and is 'Active'. Channel 2 is configured with '%RH' units, '4-20 rxmt' (100%), 'Hs2' (105.0), and 'Ls2' (5.0), and is also 'Active'. Channels 3 and 4 are 'Disabled'. At the bottom of each channel column is an 'addr:' field (1, 2, 3, 4). A large button at the bottom center says 'Push to Enable Cold Junction offset compensation'. Two other buttons at the bottom are 'Push to change access code' and 'Push to change Global Factors'.

### Hardware Configuration Screen:

**Chamber #:** Select the Chamber.

**Chamber Name:** Put in the name for this chamber.

**Channel Active:** Enable (Active) or Disable the channel corresponding to the module address.

**Channel Name:** Assign a name for each enabled (Active) channel.  
This name is used as the column header in the spreadsheet file.

**Channel Units:** Select the channel units for each enabled (Active) channel.  
- degrees C, degrees F, %RH, 4-20 rxmt or other -  
(Do Not use “4-20 rxmt” for channel 1 or 2)

**Note:** Channel 3 “4-20 rxmt” is a special configuration that allows the Setpoint of a JCS 600(A) or 620(A) to be read on channel 3 and compared to the process value on channel 1 with the HI and LO limits utilized as Plus and Minus Deviation Limits around the Setpoint.  
Channel 4 is paired with Channel 2 Process value when configured as “4-20 rxmt”.

The required address for each channel of the Chamber # selected is shown at the bottom of each channel information block. Each Chamber # and Module address are unique numbers in the system.

Push the blue “Push to store displayed settings” Button when you are ready to store the information and configure the next chamber.

After all the information for all chambers has been entered, push the Red Exit button to return to the

## ChamberLog Setup Screen.

### SETTING UP THE ChamberLog™ GLOBAL FACTORS: (Fig. 1)

From the Main Screen click on the following buttons to access the Global Screen:

#### SETUP

PUSH TO ENTER CODE (from ACCESS NUMBER). The default Access number is 0.

#### CHANGE HARDWARE CONFIGURATIONS

PUSH TO ENTER CODE (from ACCESS NUMBER). The default Access number is 0.

#### PUSH TO CHANGE GLOBAL FACTORS

PUSH TO ENTER CODE (from ACCESS NUMBER). The default Access number is 0.

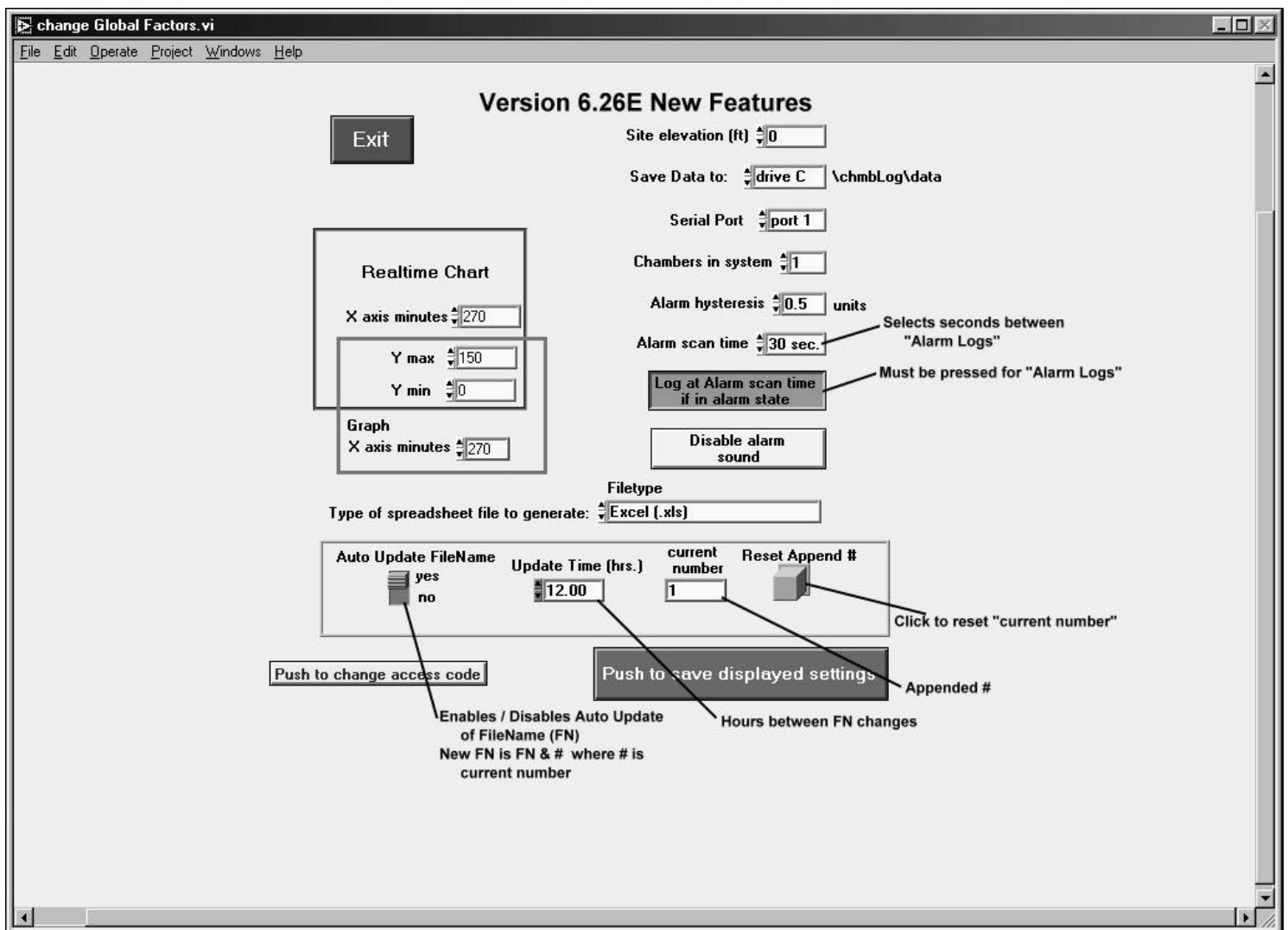


Fig. 1 - Global Screen

## Global Screen

**Site Elevation:** Used only for Wet/Dry bulb %RH calculations

**Save Data To:** Drive used for storing data. Drives A-N available. Default is C.

**Serial Port:** Select serial port ChamberLog will operate from. 1-10 available. Default is 1.

**Chambers in System:** Total number of chambers on network (active or not). Default is 1.

**Alarm Hysteresis:** The value in units the process must return below (Hi alarm) or above (Lo Alarm) the alarm value to allow the alarm to reset. Default is 0.5 units of measurement.

**Alarm Scan Time:** Select scan interval of 5, 10, 20, 30 or 60 seconds during alarm condition.

**Alarm Scan Enable/Disable:** When enabled, the data log will record at the selected Alarm Scan time during an alarm condition.

When the alarm condition no longer exists the scan rate returns to the value selected in the Hardware configuration for that ChamberLog unit.

**Enable/Disable Alarm Sound:** When enabled, an alarm condition generates an audible sound at the computer.

**Filetype:** Select the spreadsheet file format for storing the Datalog information.

Choices available are, Excel (.xls), Quattro Pro (.wb3) or Text file tab delimited (.txt).

**Auto Update FileName: Yes (Enabled):**

The filename of each Active chamber is appended with a "& #" at the end of each Filename Update Cycle. All active chamber's filenames are appended.

A new file is generated. The filename remains the same and the appended # (current number) is incremented by one.

All files are appended with the same # at the same time.

The FileName **Update Time** is entered in Hours/tenths. 6.5 = 6 hours and 30 minutes.

**Current Number (Appended #):** The number that will be appended to the filename at the end of the Update Filename cycle.

**Reset Append #:** Resets the current number to 0 (zero).

**Auto Update FileName: NO (Disabled):**

Standard ChamberLog operation.

All Active chambers datalog to the assigned filename.



### RealTime Chart & Graph:

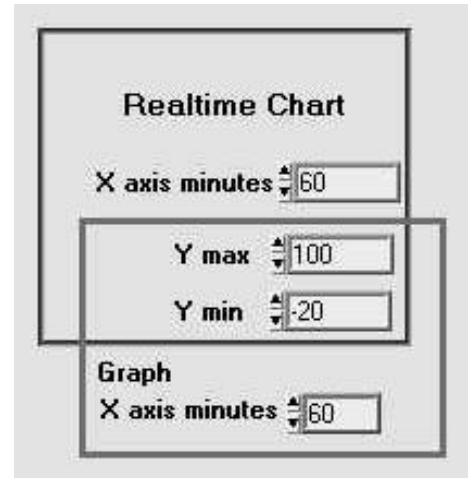
When the “RealTime chart is ON” is selected on the Main Screen. The RealTime Chart is displayed on the Main Screen using the X & Y axis values entered in the Global settings (Fig 1, item 10).

Pushing the “Graph a file” button on the Main Screen will provide a list of files. Any of the files listed can be selected to be graphed.

Both the RealTime Chart and Graph share common Y-axis, Min and Max, settings. They are selected in the Global Setting.

The “X” (time in minutes) axis is an independent setting for the RealTime Chart and Graph.

The X axis default value is 270 minutes.



(See Fig. 1)

**Push to save displayed settings:** This button appears on all but the Main screen.  
*It must be pushed for any changes made to take affect.*

**Push to change access code:** The Level 3 (Global Settings) access code can be changed here.

**EXIT** button: Exits Global Settings Screen and returns to the Hardware Configuration Screen.

Push EXIT from the “Hardware Configuration” Screen and the” SETUP” Screen to return to the Main Screen.

### NOTE:

**After changing the “Serial Port” or the “Chambers in System” Global values, the program is automatically stopped, returned to the Main Screen and MUST be restarted.**

## ChamberLog Model CL2001 & CL2002

### **COLD JUNCTION COMPENSATION ADJUSTMENT FOR TC INPUT CHANNELS when channels are paired for Drybulb/Wetbulb Humidity applications**

This procedure is not required. However, it is included to allow an extremely precise offset adjustment of the Wet Bulb/Dry Bulb Cold Junction Compensation for the thermocouple input modules.

NOTE: All TC paired input modules must be done at the same time.

This procedure does not apply to any module configuration other than thermocouple.

EQUIPMENT REQUIRED: Thermocouple calibrator.

Extension TC (thermocouple) wire of the proper type (T, J, etc.).

Set the calibrator for the proper TC type (T, J, etc.).

Connect the calibrator to the ChamberLog input(s) using a piece of TC extension wire of the proper type.

For multiple inputs of the same TC type connect the module inputs in parallel using TC wire.

If a channel has a different thermocouple type input, a separate calibrator is needed.

Set the calibrator(s) to the output mode and adjust the output to 25.0 deg. C.

From the Main ChamberLog screen push the “*SETUP*” button. (Access the SETUP screen)

From the SETUP screen push the “*Hardware Configuration*” button. (Access the Hardware Configuration)

NOTE: All Channels must be in Deg C.

If the modules are in Deg C go to “**A.**”

If any of the thermocouple input channels units are in Deg F set them to Deg. C.

Push the “*Push to Save Displayed Settings,*” button.

Push “*EXIT,*” button to return to the SETUP screen.

Push “*EXIT,*” button to return to the Main Screen.

Wait 5 to 10 seconds for the screen displays to update.

The TC channels should display the approximate output value of the calibrator in Deg C.

Push the “*SETUP*” button to access the SETUP screen.

Push the “*Hardware Configuration*” button to access the Hardware Configuration.

**A.** Push the “*Push to Enable Cold Junctions Offset Compensation*” button.

The “*Input Value ( C Deg.)*” field, and “*Push to Compensate*” button will appear.

Enter the value of the calibrator setting in the “*Input Value ( C Deg.)*” field.

Push the “*Push to Compensate*” button.

Change the required channels from “C” back to “F” if needed.

Push the “*Push to Save Displayed Settings*” button.

Push “*EXIT.*” (Exit Hardware Configuration)

Push “*EXIT.*” (Exit SETUP)

Main Screen appears.

Cold Junction Offset Compensation is complete.