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• Introduction

Thank you for choosing the Vaetrix Temperature Probe. Vaetrix is engineered by individuals that have been in the process control industry for well over twenty years. We take pride in the fact that our products are designed and manufactured in the USA. The unit itself is backed by an industry leading four-year warranty. Our products are designed and built to take abuse. We would have it no other way.

The only way we can get better is by listening to you, the customer. If you have any comments or suggestions feel free to send us an email at sales@vaetrix.com or call at 888-797-3740.

• Brief Overview

The unit designed to be used with our Hydro Test Gauge series as an alternative means to monitor and record temperature. It is powered by 3 AA alkaline batteries that provide over 1000 hours of continuous use. To replace the batteries just remove the two screws located in the battery door. The unit is sealed to meet IP-64 so make sure the battery door screws are tight. Communications for datalogging and downloads is handed by USB. A standard USB to Micro B cable will work. For further details on all important measurement parameters consult the specifications section in the manual.

When the power key is pressed down the unit enters the boot-up sequence.

Unit firmware revision, range, serial number, and contact information will be displayed for two seconds.

Once complete the unit is actively reading temperature in Measure Mode.

There are two modes of operation:

(Measure)

The Measure Mode keys ZERO, UNITS, and SNAPSHOT are active.

The backlight will automatically turn On with any key press and remain on for 60 seconds. Backlight settings can be changed in Program Mode under DISPLAY.

(Program)








Simply press and hold the DOWN arrow to access *Program Mode*. Use the ARROW keys to navigate and SELECT to confirm. The quick overview below shows you all the available menu options.








MAIN MENU	OPTIONS
ADMIN	Control Features, Reduce Resolution, Adjust Calibration, Restore Factory Calibration
ALARMS	On/Off/Set High or Low
CLOCK	Set Date, Time, Time Zone, and Format
DAMPING	On/Off
DATALOGGING	Start, Configure
DISPLAY	Timeouts, Contrast, Refresh Interval, Color
MINMAX	Reset
SNAPSHOT	View
TARE	Live, Offset, Reset

• Safety

We use the International Electrical Symbols on our products and in the manuals to alert users of key criteria that must be followed when operating the product.

Symbol	Description
	Power Off / Power On
	Earth Ground
	Warning, Risk of Danger or Damage
	European Conformity
	Hazardous Voltage
	Battery Symbol
	Wheelie Bin, Conforms to EC Directive for Disposal

-  Use a #2 phillips screwdriver when tightening the battery door screws to prevent stripping and provide adequate sealing.
-  Use backup wrench to install or remove fittings.
-  Unit is not approved for use in hazardous locations.
-  To clean the unit, wipe down with damp cloth and small amount of dish soap. Do not submerge the unit in water at anytime.
-  Always use a thermowell when installing the probe into a pipe with live pressure.

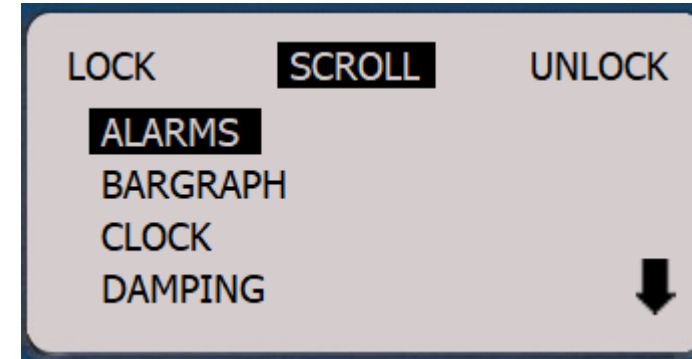
- Admin

In the Admin menu you have the ability to CONTROL FEATURES, REDUCE RESOLUTION, ADJUST CALIBRATION, or RESTORE FACTORY CAL. A password must be entered to gain access to these features. The default password is 2017. Use the ARROW keys enter in the value and press the SELECT key.

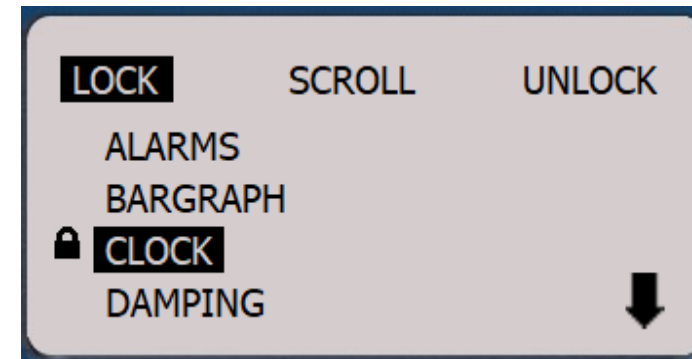


- Admin - Control Features

The menu options in the unit can be locked out according to your preferences.

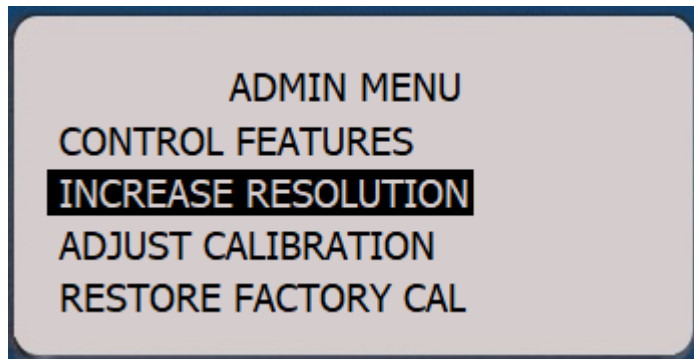
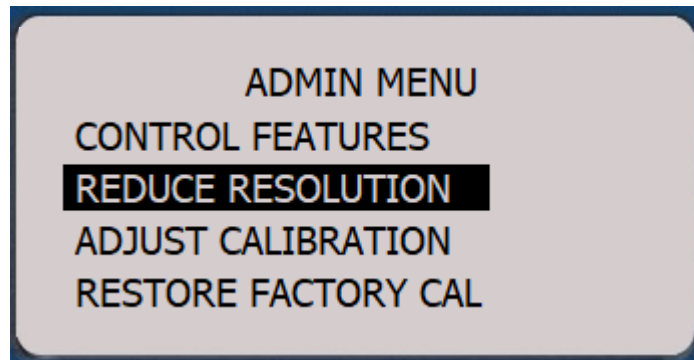


SCROLL using the up or down ARROW keys to highlight the options. Use the right or left ARROW keys to LOCK or UNLOCK. The end user will enter password to UNLOCK.



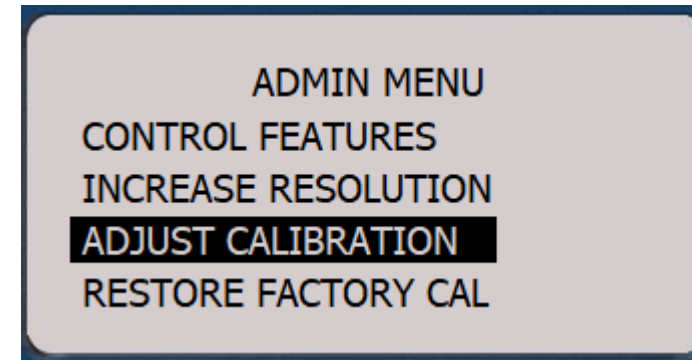
- Admin – Reduce Resolution

The least significant digit will be removed from the display when selecting REDUCE RESOLUTION. Full resolution can be restored by entering back in Admin and selecting INCREASE RESOLUTION.



- Admin – Adjust Calibration

We recommend calibration on an annual basis. Calibration frequency should be determined by your quality system based on history, usage, and other key criteria.



Although we suggest you return the HTP to factory for calibration, you can field calibrate the unit with trained personnel and equipment traceable to the National Institute of Standards and Technology (NIST). To begin the process select ADJUST CALIBRATION.

- Admin – Adjust Calibration

The unit will prompt you to apply the high reference temperature. We recommend that you are within 10% of the high temperature reference setpoint. Enter in the known value by using the ARROW keys to increase or decrease digits and confirm with the SELECT key.



Follow the same steps for the low temperature reference setpoint. Once again, we recommend you are with 10% of the setpoint.

- Admin – Adjust Calibration

The unit will respond by with “Storing Calibration” and return to Measure Mode.

Certain temperature ranges may have more than two temperature reference setpoints. Follow the same procedure of entering in the known value and confirming with SELECT key. Once the calibration is complete verify the unit is within specification by the running the up and down scale throughout range. Reference the original Certificate of Calibration for cardinal points.

- Admin – Restore Calibration

If you make a mistake during the calibration process or the unit is not within specification the factory defaults can be restored. Navigate to RESTORE FACTORY CAL and press the SELECT key. The unit will respond by with “Storing Calibration” and return to Measure Mode.



Contact the factory if you are having any issues with calibration.

- Alarms

The HTP can be setup to indicate a Low and High Alarm. Once the low or high value is reached the display or value will turn red until the temperature changes. To adjust an alarm select Low or High Alarm and then SET. To set the alarm value use the right or left arrow keys to select the decimal place and the up and down are keys increase or decrease the value. Press SELECT to confirm the value and return to the selection menu.



Once the alarm setpoint has been reached the high or low alarm icon will show on the display and background color will change to red to indicate an alarm status.

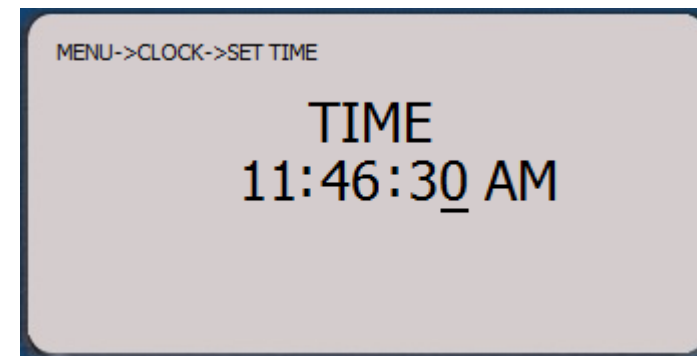
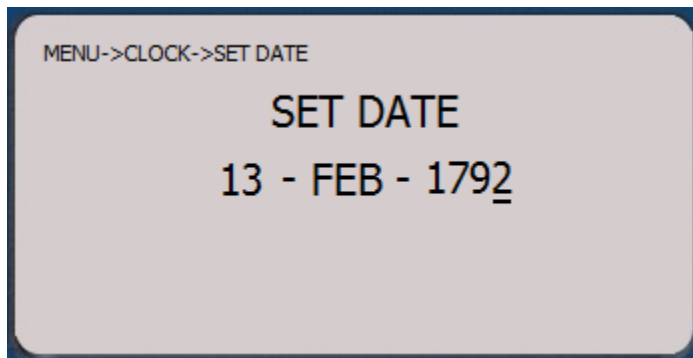
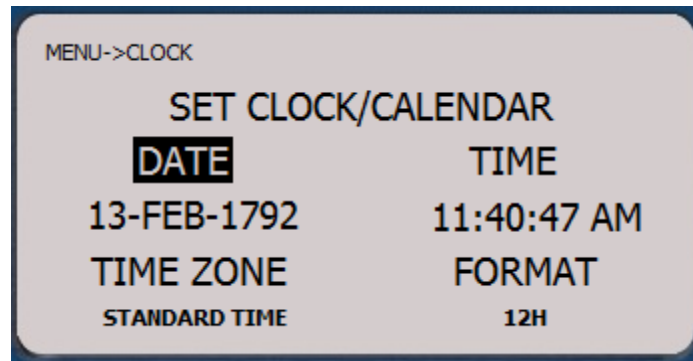
To disable an alarm, choose OFF and SELECT.



- Clock

A unique feature of the HTP is a real time operating clock for data logging or recording events. The unit will keep time even when the standard AA batteries are replaced. To set the Date, Time, Time Zone (Daylight saving time), or Time Format use the ARROW keys to highlight the choice and press SELECT.

Make sure that unit is set to match the PC to avoid any syncing issues with time when uploading or downloading data.



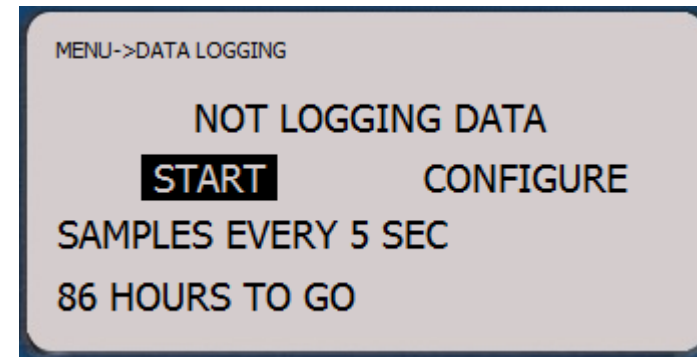
- Damping

Damping is designed to average out pulsating temperature and smooth out the pressure signal so that it is readable on the display.



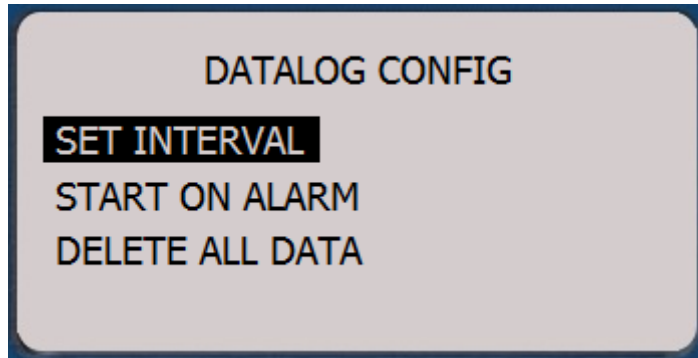
- Datalogging

The test unit has the capability to store up to 64000 temperature readings in up to 200 unique sessions in the internal non-volatile memory. In datalogging mode, the current sample rate and how many hours the unit can record before the memory is at capacity is shown. At Low Battery Indication the unit will shut down the datalogging feature.



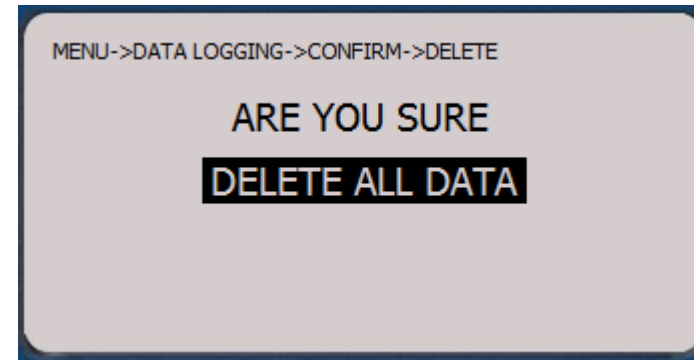
To change settings select CONFIGURE. The sample rate can be set from 1 second to 24 hours. Just use the arrows key to desired value and press SELECT to confirm.

- Datalogging



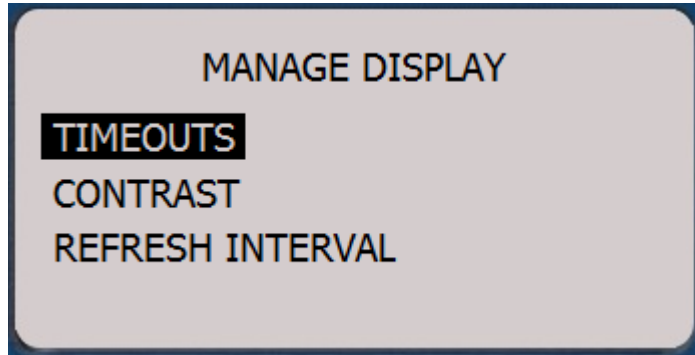
Datalogging can be setup to automatically start on an Alarm condition as well. Simply choose **START ON ALARM** and press **SELECT**. Datalogging will start based on either the High or Low alarm setting and run at the defined interval from that point forward. Clearing the alarm will not turn off Datalogging.

DELETE ALL DATA will erase all the logged data on the unit. Use the UP arrow key or HOME to escape.



- Display

The HTP has an active graphics display that can be setup based on your preferences.



Under TIMEOUTS the DISPLAY or LIGHT can be set to turn off to conserve battery life. Intervals can be set anywhere from ten seconds to thirty minutes of inactivity.



Just choose SET and press SELECT to define the interval. Use the left or right arrow keys to move the cursor and up and down arrow keys to set the value.



Press SELECT to confirm the value. The status in the menu will change from INACTIVE to ACTIVE denoting the current state.

Certain lighting conditions may require an adjustment to the display contrast for optimum viewing. Use the Up and Down arrow keys and bargraph indicator to set the contrast. Press SELECT to confirm the setting.

- **Min/Max**

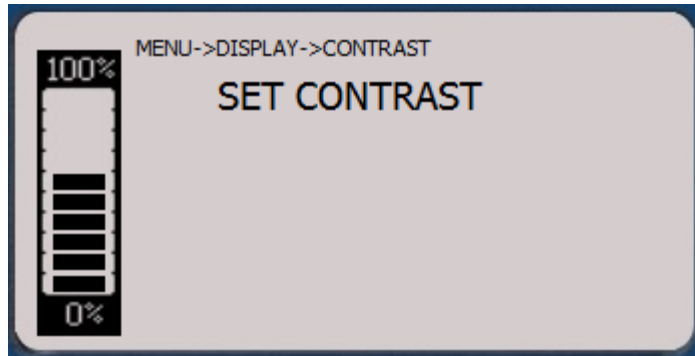
The HTG tracks the Maximum and Minimum pressure readings from the time the unit powers on or the data was last reset. MAX, MIN and LIVE pressure readings can be viewed all on one screen. Just choose MINMAX from the main menu and the following screen will appear. To reset the values press the SELECT key.

A screenshot of a digital display showing pressure readings. The display is rectangular with a light gray background and a dark border. It contains three rows of text: "MAX" followed by "21.70", "MIN" followed by "0.04", and "LIVE" followed by "9.19". At the bottom right of the display, there is a button labeled "RESET" in white text on a dark rectangular background.

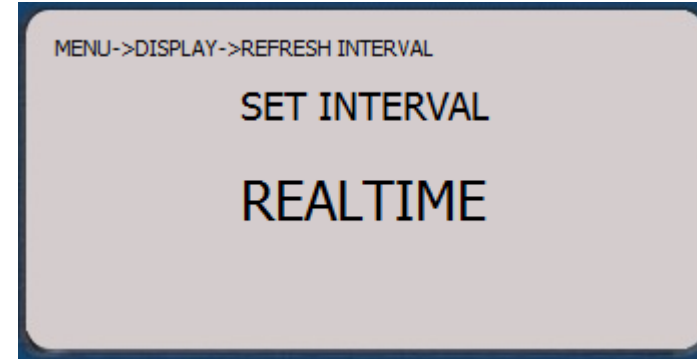
MAX	21.70
MIN	0.04
LIVE	9.19
	RESET

- Display

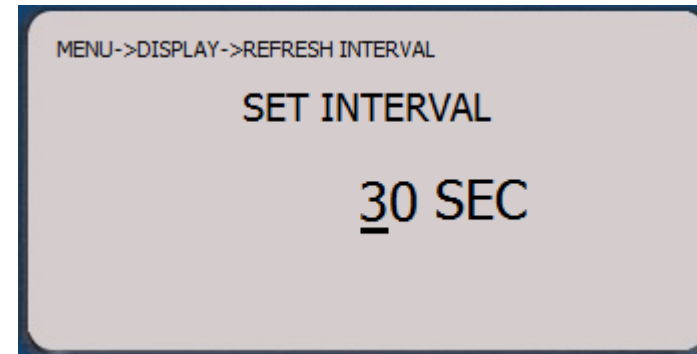
Certain lighting conditions may require an adjustment to the display contrast for optimum viewing. Use the Up and Down arrow keys and bargraph indicator to set the contrast. Press SELECT to confirm the setting.



The refresh interval or how the graphics display is updated can be set to the user's preference. The default setting for the unit is REALTIME. This means the unit updates up to 4 times a second depending on loading.



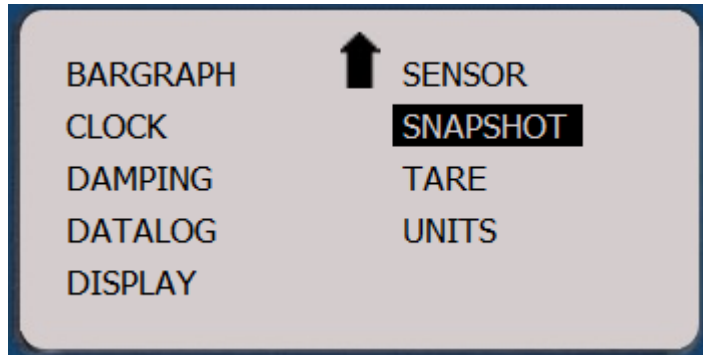
If a high update rate is not needed the interval can be extended to conserve battery life. To adjust the refresh intervals in seconds, use the Arrow Keys and press SELECT. The interval can be set to a maximum of thirty seconds.



The display backlight color can be changed from Blue to Green.

- Snapshot

If you look carefully at the keypad on the HTP you will notice a camera icon next to right arrow key. The snapshot feature is a quick way to capture and record temperature readings while in Measure Mode. Just press right arrow key and you will notice the camera icon appearing for one second to note a picture was taken with a date and time snap. Up to twenty snapshots can be taken and stored. To view the pictures select SNAPSHOT in program mode.



Use the Up and Down arrow to scroll through the readings.

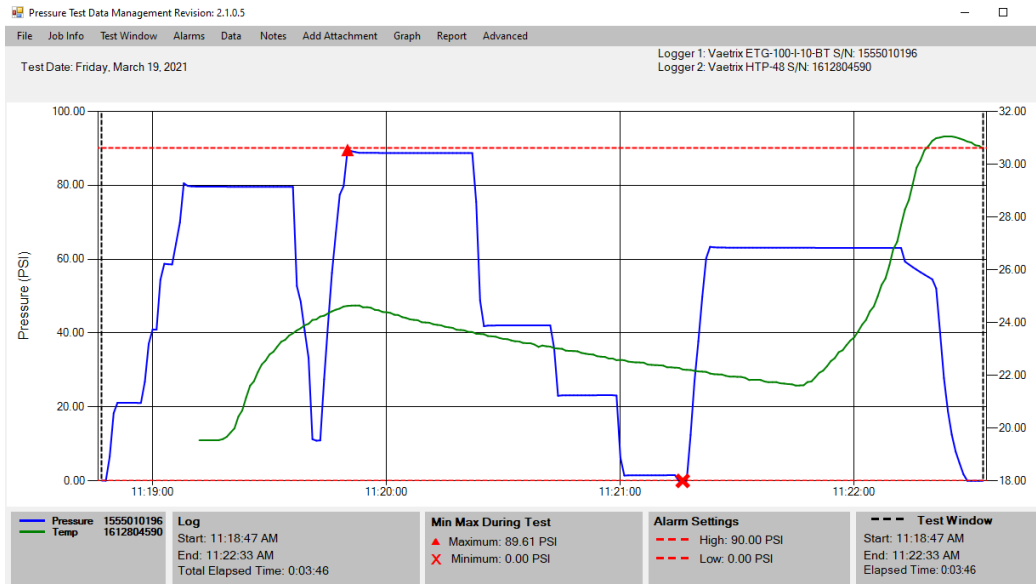


The date and time is stored with each snapshot. Any new snapshots taken will overwrite the oldest stored in memory.

- Hydro Testing Software Application

The data from any HTP can be imported directly into the Hydro Testing Software application using the Advanced tab.

The time must overlap and the test must be based on pressure initially.



File – Open a report. Save a report, or Export to .pdf

Job Info – Define the job title, customer name, project title, location, testing company, location, and technicians.

Test Window – Set the test window or hide the test window to narrow specific events on the graph.

Alarms – Set or hide temperature alarms in order to keep the test with a certain set of parameters.

Data – Show individual points taken during the tests on the graph or view the raw data points in a separate window.

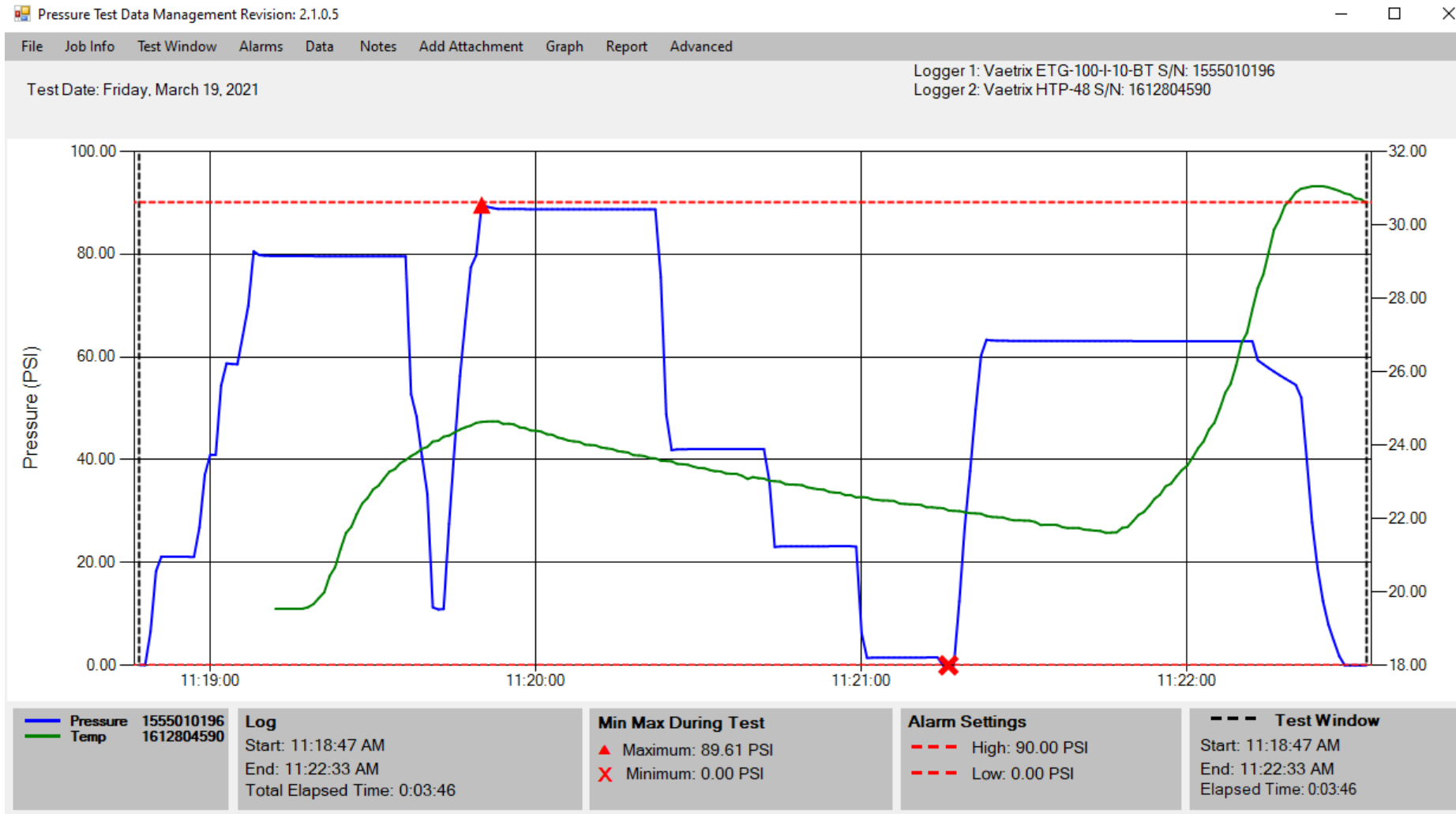
Notes – Add a note on the graph to explain certain scenarios during testing. Preview the notes page prior to printing the report.

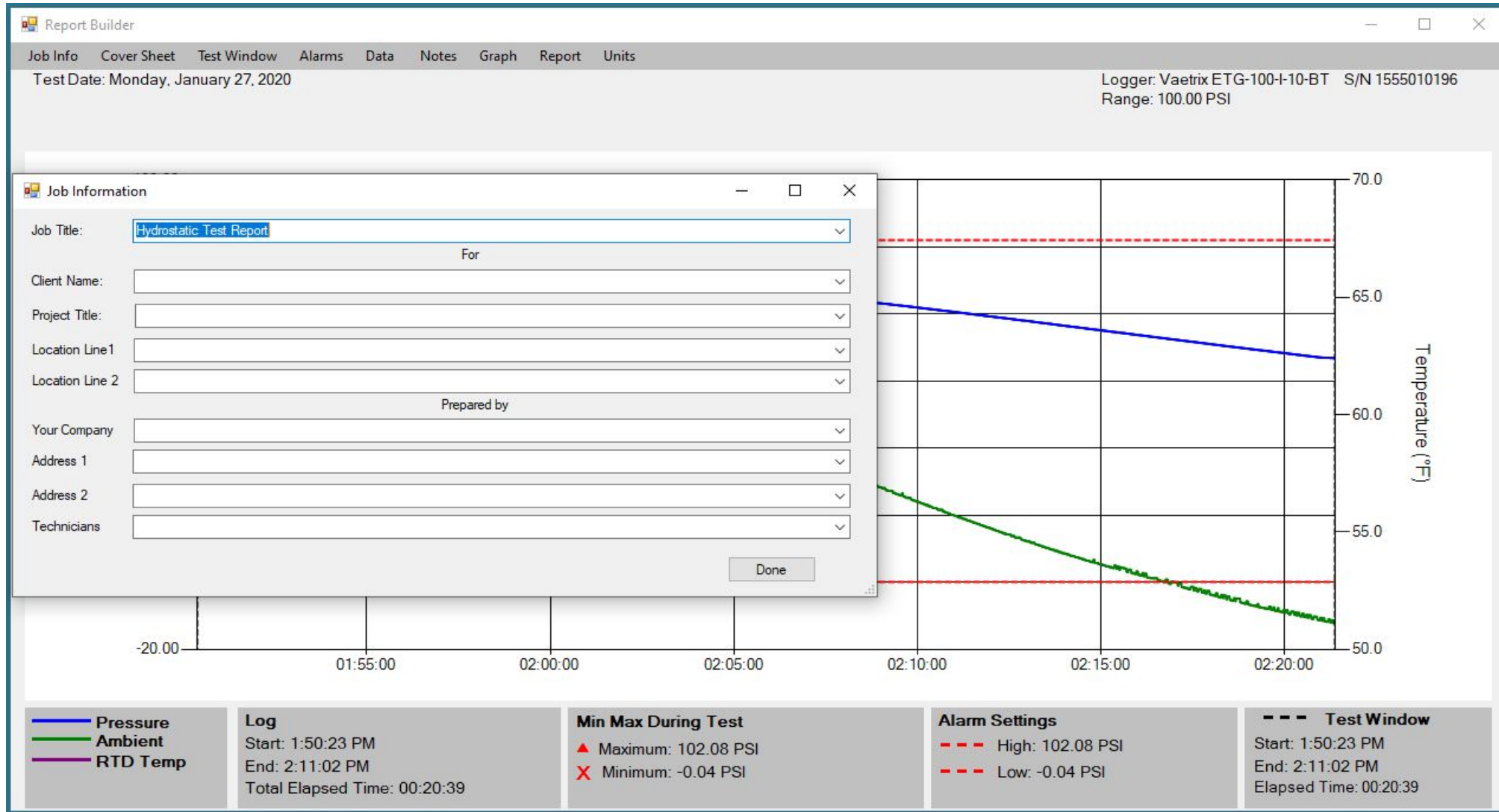
Add Attachment – Upload files to add to report

Graph – Print the entire graph or zoom in to print details on the graph. Specify page size (A4) 8.5" x 11" or (A3) 11" x 17".

Report – Preview the report for printing or save the report as a .pdf file. Print all the data or define how the data is printed to shorten report length without compromising the data.

Advanced – Change engineering units, crop data using test window, import .data files from the HTP probe.





Power	3AA Alkaline Batteries (LR6)
Dimensions	5.95" x 4.08" x 1.65" (Length x Diameter x Depth)
Weight	1.77 Pounds (803 Grams)
Case	Corrosion Resistant Aluminum (Powder Coated)
Display	Tri-Color Graphics Display, 240 x 120 – Real True Type Font Digits (0.6"/15.2 mm high), Protected with Polycarbonate
Temperature Accuracy	$\pm 1^{\circ}\text{F}$ or $\pm 1^{\circ}\text{C}$ (Resolution XXX.X) <i>Over compensated operating range. Allow adequate stabilization time.</i>
RTD Temperature Rating	-22°F to 302°F (-30°C to 150°C) <i>Compensated operating range for probe.</i>

Operating Temperature	14°F to 122°F (-10°C to 50°C) <i>Compensated range of base unit with display</i>
Storage Temperature	-10°F to 150°F (-23°C to 65°C) <i>Remove batteries for storage over thirty days</i>
Humidity	0%-95% (Non-Condensing)
IP Rating	IP64 Handheld
Low Battery Indication	3.7 Volts, 3.5 Volts – Shutdown
Battery Life	Typical Use (Duracell Ultra) 1000 Hours – Backlight On in Measure Mode 1500 Hours - No Display Datalogging at 1 Second Interval
Memory	Non-Volatile Flash Memory, 64000 Samples, 200 Sessions
Output	USB – MICRO B
Compression Fitting	1/2" MNPT <i>Not Rated for Pressure – Use a Thermowell to install RTD for safety!</i>

Specifications



Update Rate	4 Readings Per Second
Units	23 Selectable, 1 Custom
Warranty	4 Years – Register product at www.vaetrix.com .



Model	RTD Length	RTD Type	Options
HTP	XX Inches	RTD = Fixed RTD FLEX = Flex probe with RTD	N/A

Options: HTP-12-RTD or HTP-72-FLEX (Consult factory for others)



- Service and Product Registration

To initiate the service process on your Vaetrix product complete the RMA form located on the website (www.vaetrix.com) or feel free to give us a call. Please have the model number, serial number, and reason for return available so that we can walk you through the process.

It is important to register your product to ensure you receive the full forty eight month or four year product warranty. Registration can be completed online at www.vaetrix.com or by phone. If the product is not registered within ninety days from purchase through an authorized partner, Vaetrix reserves the right to honor the full product warranty at our discretion.

- Warranty

Upon registration, Vaetrix warrants our products against manufacturing defects and workmanship for a period of forty eight months from the date of shipment to the original buyer. If you fail to register the product, a limited twelve month warranty will remain in effect. Vaetrix will repair or replace any defective device at no charge, this includes shipping charges. All warranty claims will be evaluated to determine if the claim was caused by product alteration, misuse, or use outside the published specifications. If we determine the root cause was due to negligence, there will be charges for the work completed in order to bring the product to the original published specifications. Please consult the website for details on returning the product.

Vaetrix under no circumstances shall be liable for amount greater than the product value at time of purchase. This includes and incidental, consequential, or special damages that may have occurred during use. This statement of warranty is in lieu of all other warranties, guarantees, liabilities and obligations, statutory or implied to the original purchase or to any other party.