

XpertVal – USER'S GUIDE Revision 2.0 _ May 2005



LIVES International

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1 Introduction

1.1 Introduction

XpertVal is a stand-alone thermal validation system that simplifies the entire validation process by significantly reducing setup, minimizing sensor handling, and presenting critical study data in easily customized report formats. This advanced system is specifically designed to conform with new FDA electronic records guidelines (21 CFR Part 11) and meet international and European norms for validation of pharmaceutical, biotechnology and medical device (EN 285, EN 554), manufacturing plants.

XpertVal is a portable system intended to be used throughout the facility on a routine basis. Although Lives International specifies an operating environment of 0° to 50°C and a relative humidity of <95% (non-condensing), as well as a nominal supply voltage of 115 / 230 VAC, these environmental specifications will not be verified in this document, because the instrument will not be permanently installed in a single location.

Continuous evolution of the pharmaceutical, biotechnology, medical equipment market and international regulations request more reliability and best performance of the Thermal Validation Systems.

The complex equipment controlled by the computer has the ability to help the final user to improve his validations of thermal process.

Validation of software; IQ & OQ, training the user; 21 CFR part 11 compliant; prompt and high quality Service After Sales are few of the methods applied by LIVES International to allow XpertVal users to obtain the highest degree of comfort and confidence XpertVal thermal validation system.

XpertVal System saves time and offer safety features by:

- hands free thermocouple calibration before and after the test,
- quick training,
- user friendly,
- automatic reports generation (calibration, test, post calibration)
- real time trending
- statistics after the test
- 21 CFR Part 11
- etc

Raw data is encrypted and double protected on a PCMCIA card and in a file on the hard disk.

The system meets European and American requirements concerning thermal validation processes, electronic data protection and data signature.

1.2 Concept

XpertVal is the latest generation in Lives International's line of thermal validation systems. It is a compact, modular, and portable instrument designed specifically by Fluke to meet current thermal validation needs and regulations. The XpertVal can accommodate up to 20 sensor inputs, in any combination of thermocouples, PT100, thermistors, voltages or current inputs.

Sensor input is accomplished through a Input Module , a modular sensor input interface that protects the electronics against dust, humidity, electrical noise, and mechanical shock. The module has 20 sensor input channels, a cold junction reference to maintain measurement accuracy in different environmental conditions. The temperature measurement range is -200°C to 500°C, depending on the type of thermocouple and selected resolution used, with a total system measurement accuracy of 0.191°C at 121.0 C.

XpertVal System can easily be connected to a data logger Fluke, to temperature standards or reference baths Lives or Hart. This modular design allows for fully automatic sensor calibration, as well as multiple calibration or test equipment configurations.

XpertVal software is designed to run on Windows 95,98, 2000, NT or XP and provides everything needed to perform validation testing. Using XpertVal software, a system administrator creates user accounts and assigns user IDs, passwords, and access permission levels that identify the person operating the instrument and prevent unauthorized operation. Validation study setups, which include calibration criteria, are programmed using the XpertVal Software, and can be run in standalone mode or under PC control. The XpertVal also provides for encoded, secure data files that prevent modification of the original data, and includes data reporting options, either as printed hardcopies or spreadsheet-compatible electronic files. This secure electronic data format is designed to satisfy the requirements of 21 CFR Part 11 (Electronic Records and Signatures). Data logger Hydra controlled by XpertVal has 2 MB of PCMCIA memory and 100 scans buffer internal memory. The XpertVal is designed to write data to internal memory, PCMCIA and PC hard drive (if connected) during sensor calibration, calibration verification and test. Hydra's PCMCIA card can be used to transfer Test data between the XpertVal Software and the data logger.

Calibration, Calibration Verification and Test data is recorded to the hard disk in real time.

An external battery can be connected to Hydra data logger in order to provide electrical supply in case of a power loss. The battery provides approximately 24 hours of power.

XpertVal is designed to operate with the Lives probe connected to the block, with Hart probe model 1502 and Kaye IRTD, and the Hart and Lives temperature blocks or cryo bath.

The equipment provides NIST traceable calibration of thermocouples used in thermal validation studies, with a range of -183°C to 420°C. During calibration and/or test, the XpertVal automatically reads and monitors the temperature of the reference probe. For thermocouple calibration, the reference probe functions as the standard for correcting thermocouple readings. The Temperature References provide highly stable temperature conditions for sensor calibration, and respond to pre-programmed calibration criteria, allowing automatic thermocouple calibration at both low and high temperature set-points, with an optional third set-point for a mid-range temperature check.

The significant improvement of calibration accuracy and speed in thermocouple calibration with XpertVal is obtained by using the exclusive features of Lives temperature blocks : connection of the reference probe directly to the block , the correction coefficients of the reference being stored in the memory of the block.

1.3 Advantages

- Security of data
- Data logger serial number control operation
- Pyramid operations:
 - Based on Templates -> Calibrations
 - Based on Calibration -> Tests
 - Test
- Reduces the thermocouple calibration period in comparison to a manual calibration
- Reproducibility of results using completely automatic calibration
- Specific and an individual data base for each equipment type
- Security and access levels programmable by the system administrator
- Electronic data protection and (FDA-21 CFR part 11)
- Audit trails
- Automatic operation for thermocouples calibration
- Calibration and test reports generated automatically
- Display of real time data : values & trends
- Available reports :
 - Thermocouple calibration reports
 - Test report :
- Temperature values
- F-values (for penetration study)
 - Statistics :
 - Minimum values for each channel
 - Maximum values for each channel
 - Average values for each channel

- Real time trends:
 - Values
 - The accumulated F-values
 - Intermediary reports during data
- Automatic start & stop of data acquisition based on time or value
- Data acquisition down to 1 sec.
- Channels configuration templates
- 20 temperature channels and 1 channel for an external transducer (pressure, humidity etc)
- universal sensors connection on the data logger and controlled by XpertVal :
 - thermocouples
 - PT100
 - Voltage (0-1; 0-5; 0-10 V)
 - Current (4-20 mA)
 - Thermistors
 - Etc...
- Label configuration of each thermocouple before test starting
- Easy handling of thermocouples, initial connection in the data logger module
- Recognition of up to 10 modules with the corresponding calibration report
- Thermocouple oxidation detection by the data logger
- Raw data recorded on the PCMCIA card of the data logger and in a PC file
- Standard test reports directly from the PCMCIA card
- Stand alone unit during test (no need to use a PC during test test)
- User friendly software
- Flexible software
- Software validation manual
- One day training after delivery
- IQ & OQ provided
- Standard connectors
- Control of other manufacturers equipment : Hart temperature blocks and smart probe IRTD

2 XpertVal Equipment

2.1 Hardware equipment

XpertVal validation system is composed by:

Data Logger Hydra with PCMCIA card

Temperature Reference Probe Lives (connected directly to the temperature block) or Hart probe with display

Temperature Block Lives

XpertVal validation software

PCMCIA card with 2 or 4 communication ports

Notice :

When the Lives temperature block (B series) is controlled through the Lives probe connected, it is strongly recommended that the block and the probe be calibrated together by a Lives International or Ametek calibration service. The serial number of the probe must be entered in the block by the calibration service, together with the correction coefficients for the probe. The verification of the equipment in the software allows users to be aware if the serial number of the probe does not corresponds to the serial numbered recorded in the block. Lives International declines all responsibility in case of incorrect use of probe connected to the temperature block.

2.2 Minimal Configuration of XpertVal Validation System

Minimal configuration of XpertVal validation system:

XpertVal validation system is composed by:

Data Logger Hydra with PCMCIA card

Temperature Reference Probe Lives (connected directly to the temperature block) or Hart probe with display

Temperature Block Lives

XpertVal validation software

PCMCIA card with 2 or 4 communication ports

PC (laptop or desktop) with Pentium III processor 1.0 Ghz, 126 MB SDRAM, Hard Drive 20 Go, OS: Windows 95/98 /NT / 2000 / Xp

Premium quality thermocouples

Printer for reports printing or Adobe writer installed on the laptop

WARNING

The computer to be used with the system needs to have a clean operating system and it is recommended to be dedicated computer.

It is recommended to keep the computer clean of uncontrolled installations of other software which could affect the normal operation of the system.

2.3 XpertVal Hardware Connections



Fig 1: XpertVal equipment connections.

2.4 Hardware configuration

I Configuring Hydra for Comm Operations

Connect Hydra data logger to the computer by a null modem cable. Turn the power "On"

Selecting the Baud rate:

Press the "Shift" key, release, and then press the "List" key to open the communications parameters menu. Select the baud rate by using the up/down arrow keys. Select 38400; press "Enter"



II Initializing the PCMCIA memory card

Selecting the initializing mode:

Insert the memory card to be initialized

- From the front panel of Hydra:
- Press on the "FILES" menu
- Press the up/down arrows until "Init" is displayed, the press "Enter" key
- The menu changes to "Init"

Verifying the "Init" mode:

To verify the selection of the initialization mode, press the up/down arrows keys until "yES" is displayed in the "Init" menu, then press the "Enter" key. If "yES" is selected, the menu changes to "SUrE"

Initializing the memory card

Press the up/down arrows keys to select "yES" in the "SurE" menu, then press the "Enter" key. "yES" will initialize the memory card, gracing all previous data, if any If "Err 1 Card" appears, the small

"yES" will initialize the memory card, erasing all previous data, if any. If "Err 1 Card" appears, the small switch on the card may be in the write-protect position. Reposition the switch and repeat this procedure

If the memory card can not be initialized in this way, go to the next steps and use option VI.A for initializing the card.

III. Programming the HYDRA Serial Number.

In order to use the HYDRA within the "XpertVal" software the Serial Number of the Hydra must be programmed into nonvolatile EEPROM of the instrument. Note that the serial number is not programmed prior to shipment from the factory. In order to program the serial number into the Hydra EEPROM the Terminal Program (HyperTerminal) (RS 232) should be used to establish PC-HYDRA communication (see User Manual).

Start a new HyperTerminal session (Comm 1; Bauds = 38400; Data = 8; Parity = None; Stop bit = 1; Flow control = none then File -> Properties -> Parameters -> ASCII configuration -> check the 2 upper boxes in the window : - send EOF and locally write the characters)

To check if the serial number has been previously programmed use "SERIAL?" at the Terminal prompt.

If Hydra responds with "0" then serial number has not yet been set.

The following procedure should be used to program the serial number into the EEPROM:

- At the Terminal prompt use the "SERIAL XXXXXX" command (XXXXXXX denotes the 7-digit serial number HYDRA ID Tag. Leading zeros must be entered. Note: once entered, the number cannot be changed.)
- Check if the serial number has been programmed use "SERIAL?" at the Terminal prompt. If Hydra responds with "XXXXXXX" representing the serial number then serial number has been set correctly.
- Stop the HyperTerminal session

IV. Programming the HART module's 1502A Serial Number.

Connect the Probe to the module 1502A. Connect the power supply to the module. Turn "On" the module.

Set the baud rate:

- Press the "Menu" button ("Set?" appears) then press the "K/Comm" button. The display will briefly indicate "Serial", then "bAud" and the display the current baud rate.
- Use the "Up" or "Down" arrows to increase or decrease the baud rate then press "Enter". The nest parameter in the "Comm" menu, the serial sample period, will then appear.

Start a new HyperTerminal session (Comm 1; Bauds = 9600; Data = 8; Parity = None; Stop bit = 1; Flow control = none then File \rightarrow Properties \rightarrow Parameters \rightarrow ASCII configuration \rightarrow check the 2 upper boxes in the window : - send EOF and locally write the characters)

- Enter the request *SN in order to display on the computer's screen the serial number of the module.
- Check the serial number displayed on the screen with the serial number physically labeled on the module.
- If the serial number displayed is only the last three digits or it doesn't corresponds with the serial number physically labeled on the module then it has to be changed
- Enter the following command in order to access the serial number modification: *PA=2051
- Enter the serial number of the module *SN= xxxxxx
- Enter the command *SN to display the serial number ; check if the serial number displayed is correct
- Enter the command *PA=0 to lock the calibration menu.

V Programming the PCMCIA communication card

Insert the PCMCIA communication card in the PCMCIA computer's slot.

Follow Windows instructions for installing the card; use the driver provided by the manufacturer if available.

Verify in the Control panel that 2 (or 4 – depending upon the type of PCMCIA comm card available) extra COMM ports are available

VI Connecting data logger, reference probe and temperature block on XpertVal software

Insert the PCMCIA comm card into the computer. Start up the computer. Connect Hydra to Comm 1 (standard RS232 comm port of the computer) Connect reference probe to one of the two extra comm ports available Connect temperature block to the second extra comm ports available

Start XpertVal Press "Equip" Select :

> Hydra Port = 1 Baud = 38400Module = 0

Probe

Mode: Comm port Port = 4 or one available Baud = 9600 Type =

- HART for a Hart probe
- IQRTD for a Kaye smart probe
- DTI-S1 for Ametek probe
- Lives for Lives probe connected to the block

Block

Mode: Comm port Port = 4 (or 5 or 6 or 7) Baud = 9600 for Jofra blocks 2400 for Hart blocks Type = Lives or Hart

Click on "Verify"

Data concerning all the equipment should be available on the screen.

VI.A Press "Format MC" in order to format the PMCIA card of the data logger . If data concerning the equipment is not available check the connection to the computer.

VII Configure the computer to read data from the PCMCIA card (Win 98)

Use "Word Pad" to edit "Config.sys" from "C:\" directory. Add two more lines at the end of "Config.sys" as follows:

device=c:\windows\system\csmapper.sys
device=c:\windows\system\carddrv.exe /slot=n

Replace n with the number of PCMCIA slot number available on your computer. Verify that the location of the files "Csmapper.sys" and "Carddrv.exe" is in "Windows\System" Save modifications and restart the computer.

3 XpertVal Software

3.1 Software installation and starting

Install XpertVal

Warning:

Before installing XpertVal software, disable screen savers of the computer and the "stop" of the hard disk during normal operation of the PC.

Insert installation CD in the computer and double click on "Setup.exe"

After the Setup Box, follow the instructions displayed on the screen for choosing the directory in which XpertVal will be installed.





Click on "Finish" to start the software; enter the name and the serial number; XpertVal icon is automatically placed on the desktop

Warning: this is a case sensitive window, enter the name and the serial number as written on the CD's label.

Uninstall XpertVal

Insert the installation CD and double click on "Setup.exe" - follow the instructions displayed step by step



In order to completely uninstall the software the user needs to delete "XpertVal " folder from where it was installed.

<u>Start XpertVal</u>



Define a new data base, a new audit trail will be generated automatically.



XpertVal starts



First time when XpertVal starts the user will be logged on as Admin with no password required.

3.2 Main Menu

XpertVal is structured in modules, for a better understanding and simplicity of use

The structure of the software modules:

- Setup :
- Equipment
- Administration
- Calibration / Verification Configuration
- F value configuration
- Action
- Equipment Info
- Template
- Calibration
- Verification
- Test
- Import
- Application

_

- Help
- About
- Exit

3.2.1. Setup - Equipment

Equipment Configuration Available

Three types of connections are available:

- Type I:
 - Data logger Hydra 2635A
 - Temperature block Lives
 - Reference probe Lives connected to Temperature block Lives
- Type II :
 - Data logger Hydra 2635 A
 - Temperature block Lives / Hart
 - Reference probe Hart with external display / Ametek DTI with external display / Kaye IRTD
- Type III :
 - Data logger Hydra 2635 A
 - Oil bath Hart
 - Reference probe Hart with external display / Ametek DTIwith external display / Kaye IRTD

The recommended connection is Type I, in order to improve the accuracy of the calibration :

- the reference probe is connected direct to the block through the front panel in order to control it
- highest accuracy calibration then if the block is controlled by it's internal regulation probe
- only 2 COM connections needed for calibration
- all equipment are stored in a single carry case

General case presentation:

- block, reference probe and data logger connected to PC via 3 communication ports

System Equipment Configuration

Click on the *Equipment* module in order to configure the system's equipment:

- The data logger
 - The temperature standard
- The temperature block
- Verification of connection s between the computer and the system's equipment

Equipment configuration



Data Logger

- Lock front panel option

Define:

- Communication port
- Communication speed (baud rate)
- Module number (up to 10: 0-9); <u>XpertVal remembers each module</u> <u>calibration</u>

<u>**Temperature Reference**</u>

Define:

- Communication mode
- Communication port
- Communication speed (baud rate)
- Temperature standard used
 - IRTD
 - Hart
 - Jofra
 - Lives internal probe control
 - Lives external probe control

Temperature block

Define:

- Communication mode
- Communication port
- Communication speed (baud rate)
- Temperature block used:
 - Lives
 - Hart

Front panel lock

In the data logger configuration there is a function called "lock front panel".

If the user does not activate this function, the data logger's front panel will be locked only during the thermocouple calibration. The data logger will be unlocked at the end of the calibration.

If the function is active, the locking of the front panel will be active during the thermocouple calibration and the data acquisition during the test.

When the "*lock*" function is active, the front panel keyboard of Hydra data logger does not responds to any external actions during the thermocouples calibration or during the test.

Manual stops or the modifications of the data logger configuration are forbidden to the users during the data logger function in this configuration.

The "*lock*" function is automatically disabled at the end of thermocouple calibration and/or at the end of the test. In this configuration (keyboard locked), if you exit from the software with the option: "*Terminate and Continue Hydra Scan without PC*" or "*Terminate and do not change current status of Hydra*", the data logger will continue to record the data and the front data logger's keyboard will stay locked.

In order to disable the front panel lock you need to connect the computer to the data logger. Click on "Equipment" module. Disable the option "lock front panel" and then click on "Verify".

Equipment Connections Verification:

After the configuration is done, click on "Verify". A dialog box will display the connection status between the data logger, the temperature standard, the temperature block and the computer.

🚝 Equipment Verification	
Instrument	
FLUKE 2635A 6357302 M6.9 A5.02 D1.0 L0.8 · 1/38400 · 63573021 · Unit: *C 26XX/PC · Instrument Time: 13:54:02 / 12-juin-05 Instrument-PC Time Synchro will be performed when required Memory Card is 0K · Size 512 K · Free 462 K · Num. 0f Files 3	Cancel Format MC
Probe	
LIVES Ext - 6/9600 - 529154-03 - Unit: *C Temp: +20,020*C Verification of Serial Number is Recommended	~
Block	
LIVES - 3125, ATC-157B - 6/9600 - 524435-00141 - Unit: *C Control: External	~

For each equipment connected the system will display important information: identification; the serial number; the firmware version; the communication port on which the equipment is connected; the engineering units (°C; °F; K); the status of the PCMCIA card; the size of the card; the number of files already recorded and the amount of space available. In order to format the memory card of Hydra click on "Format MC."

A warning message will than be displayed in order to prevent lose of data from the memory card.

Warning	Wa	rning	×
Hydra Scanning (if in progress) will be termin Proceed ?	ated.	Format Hydra Proceed?	MC requested
Qui Non			Non
	🎉 XValFL 1.0.0.6 - No login - Administr	rator - Equipment	
Info	Actions (\$		
Hydra MC successfully formated	Refresh Ports Verity <u>Savre</u> Cancel		
			Equipment
<u> </u>		日本 中部 日本 日本 日本 日本 日本 日本 日本 日本 日本 日本	Mode: Comm Port V Port: 6 (modern) V
			Baud: 9600 V
			Type: LIVES Ext V
			Digits: 3 (0.001)

Click on "Save" to save the verified configuration.

Reference Probe for Calibration

Different types of reference probes can be used for calibration:

Lives Reference probe - internal or external Smart probe Hart probe or Ametek DTI-1000

The new concept introduced by XpertVal is the temperature block controlled by the reference probe when using Lives probe.

The minimum requirements for this option is to use the reference block Lives ATC B Series. This type of block has an external input for the Lives reference probe so this probe could be configured to control the block - that means the regulations of the temperature block will be controlled by the external probe. Prior to this is needed to enable the option "Use external probe Lives block control if available" in "Admin" module and then choose Lives External probe in the "Equipment Configuration".





	Equipment			
Hydra				
Block	Mode:	Comm Port	4	
	Port:	6 (modem)	~	
	Baud:	9600	~	
	Туре:	LIVES Ext	~	\searrow
	Digits:	3 (0.001)	*	

3.2.2. Setup - Administration

ML09 1.00.06 - sorin - Administrato Actions	or - Administration	
	Carporerie Defons Control if available Control if available	

Equipment:

- "Use External probe Lives block control if available" : the external probe will be used to control the temperature block if a model B was chosen.
- Style: define the type of style needed

Style	Windows XP	4
	Windows XP	
	Flat	
	Office XP	
	Metal	
	Raised	

Options:

Administration will define members rights





Options available:

- delete tests:
- delete Verif and Calib:
- delete templates:
- use only reviewed templates:
- export/import tests:
- export/import verif and calib:
- create statistics:
- design reports:
- save reports:
- review reports:
- allow to review own reports:

aloow to delete reviewed items:

- show action hints:
- highlight errors in reports:

- double click and define the level allowed for the action double click and define the level allowed for the action double click and define the level allowed for the action enable or disable the option
- double click and define the level allowed for the action double click and define the level allowed for the action double click and define the level allowed for the action double click and define the level allowed for the action double click and define the level allowed for the action double click and define the level allowed for the action double click and define the level allowed for the action enable or disable the option
- logon required to end calib/verif/test and reset test: enable or disable the option
- allow to edit the Thermistors coeff. enable or disable the option

Create OFF-Line Tests	
Allowed for:	
Admin	<u>Ok</u> Cancel
] Viser	
Reviewer	Default

Members:

Create new members on 4 different levels

The administrator has the ability to modify the password change interval and the password minimum length

Administration				
Equipment Options E Members	Members List: Database Import Members List from DB or file			
Users Reporters Database	ß			
Audit Trail	Password Change Interval	90 Days		
	Password Minimum Length	4 chars		
and and a second				

Password Change Interval	90 Days	÷
Password Minimum Length	4 chars	÷

Create a new member:

- Click on the level needed to create new entry
- Click on "New Member"
- Define:
 - Login
 - Name (enter full name)
 - Password
 - Retype password
 - Redefine the access level
- Click Ok to acknowledge creation of new member

The option "Member must change password at next logon" is used to give password when enabled by the administrator.

	1.00000		- · · · · ·
👫 Edit Member			
Login			Access Level
Name	he		Administrator
Password			O Reporter
Retype Password			⊖ Reviewer
Member must ch	ange password at next	logon	
			<u>O</u> k Cancel

Database

Enable the option "Login required to use this database" in order to avoid usage of the data base with no login. "Allow to select database on startup" will allow user to choose from different data bases available "Backup database at app. Exit" will create a backup copy of the data base when closing the application

Administration				
Equipment Options Admins Carl Members Admins Carl Pactage Admins Pactage Pactage Admins Pactage Pactage Pactage Admin Pactage Pacta	Location: C:\Vdog_0.6\Vdelta.dxl ID: (0D8F9F3F.F9A5-4CD3-9C72-1034E0EF0D4D) ✓ Login Required to use this Database ✓ Allow to select database on startup Create New DB ✓ Backup Database at App. Exit Compact Database at App. Exit Compact Database Now			

Audit Trail:

"Audit trail enabled" need to be enabled in order to generate the Audit trail report



Click on "Show Audit Report" in order to display the audit trail report ; the audit trail report has the ability to filter the events for fulfill with administrator audit trail management.

Click on the right hand arrow in order to select or unselect all filter options.

After unselected all filter options, choose only the option needed e.g. "start test" then click on "Rebuild Report": only test start will be displayed.



All options activated

Only "start test" option activated

Log 1.0.0.6 - sorin - Admir	istrator - Audit			
Actions	* 100%	🚳 🗅 🕅		
Close Report View	Audit report			Page 1 of 0
	Addit report			Printed: 29/05/2005 18:02:25, from: C:08eg_0.6/delta.dxa
Filter	Events shown: Add 0 import Test, Setup Lay Report Reviewed, Test	IN, Aude OFF, CRC ERROR gens, Download Logger, Take Deleted, Verif, Deleted, Cal	, Logon Failure, Logon, Rea Ownership, Option Change b. Deleted, Report Deleted.	eet Test, Start Test, Stop Test, Stop Calib/Neirl, Start Data Collection, Stop Data Collection, d, Manage Members, Test F.Corf, Changed, Audt. DB created, Audt Warning, Report Created, Ternedate Reviewed, Compared Database, Calib. Memiro, Battery Warning.
Rebuild Report				
	Date Time	Event	By	Description
Audit OFF	21/05/05 10.11.39	Audit D8 oreated	sorin	
Audit ON	21/05/05 19:11:41	Audit Warning	Sorin Halas(sorin)	Database location changed from C:Vilog_versionsVilog_158/delta.del to C:Vilog_0.8/delta.del
Audit Warning	21/05/05 19:11:41	Logon	Sofin Halas(sofin)	As Administrator at LIVES_SERVER
Battery Warning	21/05/05 19:13:58	Setup Loggers	Sorin Haias(sorin)	Start Time: 21:05:05 19:15:00
CRC ERROR				Stop Time: 21/05/05 23:38:00 Interval: 1
Calib. Deleted				Leggers : 105
Calib. Warning	21/05/06 22 07:00	CRC ERROR	sorin	File CRC Error: C:Vilog_0.8Vdeta.dd
Compact Database	21/05/05 22:07:02	Logen	Sorin Halas(rorin)	As Administrator at UMES_SERVER
Download Logger	22/05/05 00.30.50	CRC ERROR	sorin	File CRC Bron: C:Wog_0.#Meta.dxl
Import Test	22/05/05 00:38.57	Logon	Sorin Haias(sorin)	As Administrator at LIVES_SERVER
Logon	22/05/05 01:51:04	Logon	Sofin Halas(sofin)	As Administrator at UVES_SERVER
Logon Failure	23/05/05 02:24:23	Test Deleted	Sorin Haias(sorin)	2005 mars (29 New test 4
Manage Members	23/05/05 02:24:33	Test Deleted	Sorin Halas(sorin)	2005 marx 29 New test 3
Option Changed	23/05/05 11:05:30	Logon	Sofin Halas(sofin)	As Administrator at LIVES_SERVER
Report Created	23/05/05 11 07:08	Start Test	Sorin Haias(sorin)	2005 mai,23 New test 1
Report Deleted	23/05/06 11:07:24	Stop Test	Sorin Halas(sorin)	2005 mai,23 New test 1
Report Reviewed	23/05/05 12:38.18	Logon	Sofin Halas(sofin)	As Administrator at UVES_SERVER
Heset Lest	234646 12.38.51	Start Teat	Sorin Haias(sorin)	2005 mai (23 New test 2
Setup Loggers	23/05/05 14:04:17	Stop Test	Sofin Halap(porth)	2005 mai 23 New test 2
Start Data Collection	23/05/05 14:05:59	Download Lopper	Sorin Halas(sorin)	Leger: 300
Start Test Stop Calib/Venif Stop Data Collection				Start Time: 9486666 17:59:24 Stop Time: 1005055 19:19:24 Hearnal: 00 Proto
Stop Test Take Ownership Tarrolate Reviewed	23/05/05 14:00.35	Setup Loggers	Sorin Haias(sorin)	Start Time: 23/05/05 14:15:00 Stop Time: 23/05/05 18:00:00 Instruct: 50 Learner: 301
Test Deleted	23/05/05 18:19:38	Start Test	Sorin Haias(sorin)	offset_308,311,312,313
Test EConl. Chang	23/05/05 10:25.14	Stop Test	Sorin Halas(sorin)	offset_300.311.312.313
Veri Deleted	23/05/05 10:39.46	Start Test	Sofin Halas(sofin)	offset corect 308.011.012.010
	23/05/05 19:40:28	Stop Teat	Sorin Halas(sorin)	offset corect 308.311.312.313
	23/05/05 19:41:34	Start Test	Sorin Halas(sorin)	2005 mal 23 New test 2
	23/05/05 19:44:51	Stop Test	Serin Halas(sorin)	2005 mai.23 New test 3
	2345425 19.47.11	Start Text	Sprin Hajan(sprin)	2005 mai 33 New text 4
	23/05/05 19:47:37	Stop Test	Sofe Halas(sofe)	2005 mai 23 New test 4
	23/05/05 19 48 42	Start Text	Som Halas(som)	2005 mai 23 New text 5
	21/05/05 19 41 41	Stro Tert	Sarin Malar(roda)	2005 mail 23 New text 5
	22/05/05 10 49 25	Start Text	Sade Heinr(rode)	2005 mai 22 New York 6
	2345455 20 48 48	Stop Text	Sarin Haias(soria)	2005 mai 23 New test 6
	210505 20 47 57	Start Tert	Satis Malar(rota)	2005 mai 23 New tart 7
	2206686 30 (20 00	Step Tort	Sale Hands(s00)	2005 mai 21 Non tart 7
	2305005 20 /99 09	Deep reat	Som mass(som)	and the at the set of the
	2305005 21 02 05	start len	Som reast, com)	and the rest of the
	2006/06 21.03.01	stop rest	som Halas(som)	2000 mar.23 New test #
	23/06/06 21:04:18	start fest	Som Halas(som)	2005 mar,23 New test 9
	23/05/06 22 46:53	Stop Test	Sorin Halas(sorin)	2005 mal,23 New test 9
	I 1 03 04 04 00 03 03	La sua	Contra Distance (acceler)	An Administration of LB FO, AFRA FO,

Log 1.0.0.6 - sorin - Administral	or - Audit		
Actions	🕇 🕇 100% 🖬 🍪 🗅 🕅		
Close Report View			
	Audit report		Page 1 of 2
Filter 3	Audit report		Printed: 20/05/2005 18:09:41, from: C:Vilog_0.8/delta.dxa
Rebuild Report	Events shown: Start Test, Audit DB created		
Audit OFF	Date Time Event	By	Description
Audit DN	21/05/05 10 11 20 Aver D9 counted		
Audit Warning	210505 11 07 08 Start Tert	Soria Maias(soria)	2005 mai 21 Nan tart 1
Battery Warning	210505 12 22 51 Stort Text	Sode Malar(rodo)	2005 mai 22 New York 2
CRCERROR	22/05/05 10 10 22 Start Text	Sode Malactrode)	officer 200 215 212 212
Calib. Deleted	21/05/05 10 10 44 Start Text	Soin Heise(soin)	offset const 300 311 312 313
Last. Warning	210505 19 41 34 Stort Text	Sode Malar(rodo)	2005 mai 22 New text 2
Lompact Darabase	220505 10 47 11 9147 Test	Sode Malactrode)	2006 and 22 Max bart d
Download Logger	22/06/06 10 /0 /2 Direct Text	Costs Malas(socia)	2006 mil 20 New York 4
I mport rest	22.00.00 10 40 40	Costs Uniter(costs)	2005 million from the start of
Logon Extrem		Auto Unicertaria	2000 margo Hen desi 0
Logon Palure	23/05/06 20 4/ 5/ Start list	Sonn Halas(sonn)	2005 mar,23 New Yeat 7
Manage Members	23/05/06 21 02:08 Start Text	Sorin Halas(sorin)	2005 mai (23 New text 8
Barret Crasted	23/05/05 21.04.18 Start Test	Sortin Halas(sorin)	2005 mai.23 New test 9
Report Deleted	23/05/06 23:28:05 Start Test	Sorin Haias(sorin)	2005 mai,23 New test 10
Perot Reviewed	23/05/05 23:51:58 Start Text	Sorin Halas(sorin)	2005 mai,23 New test 11
Peret Tert	24/05/05 01.05.59 Start Test	Sortin Halas(sorin)	2005 mai.24 New test 1
Estur Language	24/05/05 01:24.55 Start Test	Sorin Haias(sorin)	2005 mai,24 New text 2
Stat Data Collection	2405/05 01.37.12 Start Text	Sorin Halas(sorin)	2005 mai 24 New text 3
Stat Lad	24/05/05 01.39.32 Start Test	Sortin Halas(sorin)	2005 mai.24 New test 4
Stop Calb/Vacil	24/05/05 01.40.19 Start Test	Sorin Haias(sorin)	2005 mai,24 New test 6
Stop Data Collection	2405/05 01.41.34 Start Text	Sorin Halas(sorin)	2005 mai 24 Nex text 6
Stop Test	24/05/05 02.34.21 Start Test	Sortin Halas(sorin)	at -00.03 °C
Take Ownership	24/05/05 09:33:31 Start Test	Sorin Haias(sorin)	2005 mai,24 New test 7
Tarrolata Revieward	2405/05 09.35.11 Start Text	Sorin Halas(sorin)	2005 mai 24 New text 8
Test Deleted	2405/05 09.35.14 Start Test	Sorin Halas(sorin)	2005 mai 24 New test 9
Test ECont Chapa	2405/05 09.44.20 Start Test	Sorin Haias(sorin)	2005 mai 24 New test 10
Verit Deleted	240505 10 13 31 Start Text	Soria Maiar(roria)	2005 mai 24 New text 11
Ten. Debios	340505 10 3405 Stor Text	Sode Malar(rodo)	tort (0, 20, 20, 150)
	2466406 (2.22.20) Stud Test	Social Malacricosia	Wild and Mine Lott 91
	240440 12 37 44 Day Test	Costs Malas(scritt)	continuing of the outer 12
	240000 12.000 3001 160	Som Palat(rom)	vernication songer megac - Jor Jou J 11, J 13
	24050513.32.55 Start left	Sonn Hakas(sonn)	2005 mai,24 New test 17
	2405/06 14.00.54 Start 1est	Sonn Haras(sonn)	2005 mai,24 New Seat 14
	2405/06 16.33.04 Start Text	Sorin Halas(rorin)	2005 mai,24 New test 15
	24/05/05 16.59.47 Start Test	Sortin Halas(sorin)	2005 mai.24 New test 16
	2405/06 17 07.18 Start Test	Sonn Haas(sonn)	2005 mai,24 New best 17
	2405/05 17.14.05 Start Text	Sorin Halas(corin)	2005 mai,24 New test 18
	2405/05 17.15.42 Start Test	Sortin Halas(sorin)	2005 mai,24 New test 19
	2405/05 20.35.20 Start Test	Sorin Haias(sorin)	2005 mai,24 New test 20
	2405/05 20.36.13 Start Tert	Sorin Halas(sorin)	2005 mai 24 Nex test 21
	24/05/05 20.38.11 Start Test	Sortin Halas(sorin)	2005 mai.24 New test 22
	24/05/05 22.40.03 Start Test	Sorin Haias(sorin)	2005 mai,24 New text 23
	24/05/05 22.46.04 Start Test	Sorin Halas(rorin)	2005 mai,24 Nex test 24
	DARKERS 22 AT AS STOR Text	Costs (Delegates de)	2005 mai 24 Nan tort 25

Auto name format:

The default name for test or calibrations reports is suggested automatically by the software

3.2.3. <u>Setup</u> - Thermocouples "Calibration" and "Verification" Configuration

Thermocouples calibration:

- The calibration is performed by comparing individual temperature values of each thermocouple wire to the NIST (or COFRAC) independent temperature probe. A very accurate calibration can be performed if the RTD probe and the calibration block are of the highest quality as specified by LIVES International.
- XpertVal allows user to perform completely automatic hands free calibration by controlling data logger, reference probe and temperature block the block will automatically switch to selected set-points as defined in the Calibration Configuration
- In order to perform a reliable calibration, the calibration system must be very stable. The user's entered value for deviation from reference allowed defines the acceptable range of the actual temperature as compared to the set temperature (calibration temperature).
- The calibration can be performed either in single-point, two-point or multiple (unlimited) points mode.
- The stability of the system is defined as the value of the drift of the temperature allowed within a particular check time for drift. When the calibration is started, the RTD temperature will be verified every one second for the length of the check time for drift. This is to assure that the initial conformity to the user's entered value for the drift of the temperature allowed has been satisfied. At any time, if the drift exceeds the limit, the check time will restart. The system stability is verified throughout the calibration and if at any time the calibration system stability conditions are not satisfied, the part of the calibration that was in progress will be repeated after the calibration system stability conditions have been met.

After calibration was done the thermocouple wire is verified to confirm that the thermocouple wire error after calibration is within the user-specified thermocouple error allowed. This verification is performed for the duration of the check time for error and typically performed either at the same temperature (for single-point calibration) or the middle point for the Low and High temperature (for two-point calibration). Any thermocouple wire not meeting the user-specified criteria of thermocouple error allowed will be set OFF.

Calibration / Verification Configuration:

Select "Calib/Verif Config." in the setup.

The thermocouple calibration and post calibration (verification) configuration module will appear on the screen.

Calibration and Verification Configuration:

Select "Calib. / Verif Config" in the main menu.

In order to add extra calibration / verification steps, right click on "Calibration" or "Verification" in the "Calibration Config" window then "Add"



To modify the settings of the set point click on the specified set point and modify:

- temperature
- error allowed
- check time for error

by using the arrows next to each parameter.

In order to increase or decrease the value:

-

- by tenth hold simultaneously "Ctrl" + "Shift" and click on the arrow (up or down)
- by units hold only "Ctrl" and click on the arrow (up or down)
- by decimals click on the arrow

🗱 Calibration Config.				🙀 Calibration Config.			_ 🗆 🗵
E ← Calibration at 90	Calibration : a	: 90	<u>0</u> k	□ 🛱 Calibration at 90	Verification : a	t 121	<u>0</u> k
at 130 Terrification at 100 at 100 at 121	Temp.(*C)	+90,0	Cancel	e ✓ Verification at 100	Temp.(°C)	+121,0	Cancel
👫 RTD & Block	Error Allowed (+/-*C)	0,5		RTD & Block	Error Allowed (+/-°C)	0,1	
	Check Time For Error (mm:ss)	3:00			Check Time For Error (mm:ss)	3:00	

Define the drift for the reference probe by clicking on "RTD & Block".

- "Drift allowed" = drift allowed for the reference probe during "check time for drift"
- "Dev. From reference allowed" = drift will be checked starting the moment when the measured temperature by the reference is within Set-point ± deviation allowed
- "Check time for drift" = drift will be verified for the time interval defined here

🗱 Calibration Config.			
E	RTD & Block		<u> </u>
at 130 → ✓ Verification → at 100 → at 121	Drift Allowed (+/-*C)	0,05	Cancel
🗱 RTD & Block	Dev. From Refer. Allowed (+/-*C)	2,0	
	Check Time For Drift (mm:ss)	3:00	

3.2.4. Setup - F Value Configuration

The module "F Config" will configure the calculation of the F value in the function of the test type: steam, dry heat with or without depyrogenetion.

The instantaneous lethal rate (F-value) of a given steam sterilization cycle is the lethality at specified conditions and can be calculated once the D-value and Z-value are known using the following equation:

$$F = 10^{(T - T)/Z}$$

Where:

 T_0 = Temperature within the item being heated

 $T_b =$ Reference temperature

Z = Z-value of the challenge organism

For steam sterilization, the values typically used are $T_b = 121.1^{\circ}C$ and $Z = 10^{\circ}C$. When these values are used, the F-value is defined as the F_0 value. The above equation is an exponential function and therefore as T_0 increases, there is an exponential increase in F_0 . Note that for F_0 , the instantaneous lethal rate at $T_0 = 121.1^{\circ}C$ is $F_0 = 1$ minute.

The sum of the instantaneous lethal rates over the course of a cycle yields the accumulated lethality delivered and is calculated using the following equation:

 $F_0 = \sum 10^{(T - 121.1^{\circ} C) / 10^{\circ} C)} \Delta t$

Where:

 Δt = The chosen time interval in minutes

T = Average temperature over the Δt interval in °C

To determine the log reduction achieved by the sterilization, the accumulated lethality is divided by the D-value as shown in the following equation:

 $LR = F_0/D$

Where:

LR = Log reduction

 F_0 = The accumulated lethality using T_b = 121.1°C and Z = 10°C

D = The D-value of the microbial population



- Choose the study type (steam, dry heat with or without depyrogenetion).

Define the Z value and the reference temperature value for F calculation.

- Define the minimum temperature from which the F Value will start accumulating

🗱 F Value Config.		F Value Config.	Image: Second state Image: Second state
Steam	✓ <u>□</u> k	Dry Heat Without Depyro.	Dry Heat With Depyro.
Z Value (°C)	+10,0 Cancel	Z Value (°C) +21,0 Canc	al Z Value (°C) +47,6 Cancel
To Temp. (°C)	+121,0	Tx Temp. (°C) +170,0	Tp Temp. (*C) +250.0
Min. Temp. To Calc. F Value (°C)	+118,0	Min. Temp. To Calc. F Value (°C) +150.0	Min. Temp. To Calc. F Value (°C) +240.0

Click on "OK" to validate the choice of the parameters for F value calculation or "Cancel" for returning in the main menu.

The F value calculation configuration may be defined or started from the main menu or started from any module (calibration or test).

If the F configuration is done starting from the main menu the values will be considered as default values for the system. If the F value configuration is done starting from another module the specified values will be available only for the active test.

The F value used to evaluate the efficiency of a sterilization process is the time necessary to produce a certain sterilization effect.

<u>F value</u> is defined as the time in minutes to produce the equivalent sterilization effect at 121 °C (250 °F).

<u>Z value</u> is defined as the temperature change in °C required to cause a one-log reduction in the D-value.

D-value is the measure of the relative heat resistance of an organism at a constant temperature.

The most commonly used value of Z for the destruction of microbial spores is 10° C (18°F). This is based on experimental observations for Baccilus Stearothermophilus – a highly heat resistant organism.

<u>3.2.5. Action – Equipment Info</u>

XpertVal is based on a equipment information templates system, which allows the user to define and store all types of equipment with specific description ,serial number, location etc...

The equipment information will then be stored in the header of the test corresponding to the equipment.

🗱 XLog 1.0.0.6 - admin - Administr	ator ·	- Equipmer	nt Info					_ 8 ×
Actions		Name		Location	🔺 Serial	GUID		
Actions	Q	Incubator		Microbiology	INC 56-678	{3DE35547-B1B0-4382-B5F	2-C4FEDE4DA382}	
New	₿.	Oven		Lab	0V34-45	{12D8A993-C7FE-4848-919	8-E463ACCB7F3D}	
Edit		Autoclave F	ED-005	Production	12345 - 67890	{18081772-9545-4DB1-99C	C-85810B8BB711}	
Listing	L							
g	L							
	L							
	L							
	L							
	L		the Equipment	at Info				
	L		👬 rdaibiiic	IC 11110				
	L		GUID	{18081772-9545-40	B1-99CC-85810B8BB711		014	
	L						UK	
			Name	Autoclave FED-005	5			
			Location	Production			Lancel	
			Location	Floquetion				
			Serial	12345 - 67890				
			Description	Injectables autoclas	10			
			Decomption	Injectables autocia	~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~			
	L							
	L							
	L							
	L							
	L							

Click on Listing to display the report of all equipment defined.

ţ	XLog 1.0.0.6 - admin - Administrator - Report Preview Form		
	Equipment	Printed: 31/05/20	Page 1 of 1 05 11:12:45, from: C:VXLog 0.6\xlog 6.dxl
	Name	Serial	Location
3	Autoclave FED-005	12345 - 67890	Production
	Mcrobiology incubator		
2022	Oven	0\/34-45	Lab
222	Lab oven		
	Incubator	INC 56-678	Microbiology
	Injectables autoclave		•
			1
	Page 1/1		<u> </u>

Close the window to return to main menu.

<u>3.2.6. Action – Template</u>

XpertVal is based on a templates system, which allows the user to define and to store the channels configuration, type of study (distribution or penetration), steam saturation report, calibration configuration, virtual channels and info about equipment.

Enter in Templates module and click on "New".

Highlight the channel(s) to be configured -> right click and "Use"

XpertVal can accommodate up to 20 sensor inputs, in any combination of thermocouples, PT100, thermistors, voltages or current inputs.

Define the type of channel :

<u>Type:</u>	Tc, T	~		Ch.	Func.	Assignment	Label	Cal. Allowed	Input	Output	M Val	B Val	Dec.
Assignment	4-20 mA 0-1 Vdc			00	QEE								
BTD BO	0-5 Vdc	U-	. Cancel	01		ot Lise							
	Rtd,2w			02	<								
<u>o</u> nunt H	Rtd,4w To, T			03		ssign abel							
Ra <u>ng</u> e:	Tc, J VS	•		04	GTT								

Actions	۲	New te	mplate											
		Ch.	Func.	Assignment	Label	Cal. Allowed	Input	Outp	ut	M Val	B Val	Dec.		
Save		00	0-10 Vdc	Press		No	0-10	0-5	5	0.50000	0.00	3	1	
Configuration	۲	01	OFF											
E Config		02	OFF											
Steam Saturation		03	OFF											
Calib. Config.		04	OFF											
Virtual Chann.			Chan. Con	fig.				× I	😨 Cha	n. Config.				_
Add Info		I	ype:		Tc, T	v –			Type:	[0-10	Vdc	~	
Input		<u>م</u>	ssianment:	temp			<u>U</u> k		Assia	nment:	Drace			
mpac				Romp			Cancel			DID DO				Car
Input Module			BID	HU:	100,00	-				HID NU:	100,	00		
All Assigned			<u>S</u> hur	nt Resistor:	3 Ohms	A V				<u>S</u> hunt Re	sistor: 3 OH	ms		
View	۲		Ra <u>n</u>	je:	Auto	~				Ra <u>ng</u> e:		Auto	~	
Grid	1		inp.	Min:	0	-				Inp. Min:	0			
Report			Inp.	Max:	10	A				Inp. Max:	10			
		_ () Out	Min:	0				۲	Out Min:				
					U					out mit	U			
		_	Out.	Max:	5	~				Out. Max:	5		÷	
			M∀a	al:	0.50000				~	<u>M</u> ∀al:	0.50	000		
			<u>B</u> Va	ł	0.00				0	<u>B</u> ∀al	0.00			
			Disp	lay Range	000.00 x1	~				Display R-	ange	0.0000 x1	*	
			Deci	mal Digits	2 (0.01)					Decimal D	ligits	0.00.0013		

Enter the label of each channel by double clicking on "label" corresponding to each channel. User can also assign specific name for each channel or group of channels by right clicking on the channel then "Assign".



The example below will use a 20 channels module and a extra pressure channel (0-10 Vdc for a 0-5 bar absolute pressure transducer), first 10 channels will be used for penetration study and last 10 channels will be used for distribution.

rato	or - Tem	plate Coni	fig.							_ 🗆 🗵
	New te	mplate								
	Ch.	Func.	Assignment	Label	Cal. Allowed	Input	Output	M Val	B Val	Dec.
	00	0-10 Vdc	Press		No	0-10	0-5	0.50000	0.00	3
	01	Tc, T	penetr	drain	Yes	-	-	1.00000	-0.01	2
	02	Tc, T	penetr		Yes	-	-	1.00000	-0.01	2
	03	Tc, T	penetr		Yes	-	-	1.00000	-0.01	2
	04	Tc, T	penetr		Yes	-	-	1.00000	-0.01	2
	05	Tc, T	penetr		Yes	-	-	1.00000	-0.01	2
	06	Tc, T	penetr		Yes	-	-	1.00000	-0.01	2
1000	07	Tc, T	penetr		Yes	-	-	1.00000	-0.01	2
	08	Tc, T	penetr		Yes	-	-	1.00000	-0.01	2
	09	Tc, T	penetr		Yes	-	-	1.00000	-0.01	2
2000	10	Tc, T	penetr		Yes	-	-	1.00000	-0.01	2
	11	Tc, T	distrib		Yes	-	-	1.00000	-0.01	2
	12	Tc, T	distrib		Yes	-	-	1.00000	-0.01	2
100	13	Tc, T	distrib		Yes	-	-	1.00000	-0.01	2
1	14	Tc, T	distrib		Yes	-	-	1.00000	-0.01	2
	15	Tc, T	distrib		Yes	-	-	1.00000	-0.01	2
	16	Tc, T	distrib		Yes	-	-	1.00000	-0.01	2
	17	Tc, T	distrib		Yes	-	-	1.00000	-0.01	2
	18	Tc, T	distrib		Yes	-	-	1.00000	-0.01	2
	19	Tc, T	distrib		Yes	-	-	1.00000	-0.01	2
	20	Tc, T	distrib		Yes	-	-	1.00000	-0.01	2
	rato	rator - Tem New te Ch. 00 01 02 03 04 05 06 07 08 09 10 11 11 12 13 14 15 16 17 18 19 20	New template Conf Ch. Func. 00 0-10 Vdc 01 Tc, T 02 Tc, T 03 Tc, T 04 Tc, T 05 Tc, T 06 Tc, T 06 Tc, T 07 Tc, T 08 Tc, T 09 Tc, T 10 Tc, T 11 Tc, T 12 Tc, T 13 Tc, T 14 Tc, T 15 Tc, T 16 Tc, T 17 Tc, T 18 Tc, T 19 Tc, T 20 Tc, T	New template Config. New template Ch. Func. Assignment 00 0-10 Vdc Press 01 Tc, T penetr 02 Tc, T penetr 03 Tc, T penetr 04 Tc, T penetr 05 Tc, T penetr 06 Tc, T penetr 06 Tc, T penetr 06 Tc, T penetr 06 Tc, T penetr 07 Tc, T penetr 08 Tc, T penetr 09 Tc, T penetr 10 Tc, T distrib 12 Tc, T distrib 13 Tc, T distrib 14 Tc, T distrib 15 Tc, T distrib 16 Tc, T distrib 17 Tc, T distrib 18 Tc, T distrib 20	Rew template. Config. New template Assignment Label 00 0-10 Vdc Press 00 01 Tc, T penetr drain 02 Tc, T penetr drain 02 Tc, T penetr drain 03 Tc, T penetr drain 04 Tc, T penetr drain 05 Tc, T penetr drain 06 Tc, T penetr drain 07 Tc, T penetr drain 08 Tc, T penetr drain 09 Tc, T penetr drain 10 Tc, T penetr drain 11 Tc, T distrib drain 12 Tc, T distrib drain 13 Tc, T distrib drain 14 Tc, T distrib drain 15 Tc, T distrib drain	Rev template Config. New template Ch. Func. Assignment Label Cal. Allowed 00 0-10 Vdc Press No 01 Tc, T penetr drain Yes 02 Tc, T penetr drain Yes 03 Tc, T penetr Yes Yes 04 Tc, T penetr Yes Yes 05 Tc, T penetr Yes Yes 06 Tc, T penetr Yes Yes 07 Tc, T penetr Yes Yes 08 Tc, T penetr Yes Yes 09 Tc, T penetr Yes Yes 10 Tc, T penetr Yes Yes 11 Tc, T penetr Yes Yes 12 Tc, T distrib Yes Yes 13 Tc, T distrib Yes Yes <td< td=""><td>rator - Template Config. New template New template Ch. Func. Assignment Label Cal. Allowed Input 00 0-10 Vdc Press No 0-10 01 Tc, T penetr drain Yes - 02 Tc, T penetr drain Yes - 03 Tc, T penetr drain Yes - 04 Tc, T penetr Yes - 0 05 Tc, T penetr Yes - 0 - 05 Tc, T penetr Yes - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 -<</td><td>New template Ch. Func. Assignment Label Cal. Allowed Input Output 00 0-10 Vdc Press No 0-10 0-5 01 Tc, T penetr drain Yes - - 02 Tc, T penetr drain Yes - - 03 Tc, T penetr Yes - - - 04 Tc, T penetr Yes - - - 05 Tc, T penetr Yes - - - 05 Tc, T penetr Yes - - - 06 Tc, T penetr Yes - - - - 07 Tc, T penetr Yes - - - - 08 Tc, T penetr Yes - - - - 10 Tc, T penetr Yes</td><td>New template Config. New template Ch. Func. Assignment Label Cal. Allowed Input Output M Val 00 0-10 Vdc Press No 0-10 0-5 0,50000 01 Tc, T penetr drain Yes - 1.00000 02 Tc, T penetr drain Yes - 1.00000 03 Tc, T penetr Yes - 1.00000 04 Tc, T penetr Yes - 1.00000 05 Tc, T penetr Yes - 1.00000 05 Tc, T penetr Yes - 1.00000 06 Tc, T penetr Yes - 1.00000 07 Tc, T penetr Yes - 1.00000 08 Tc, T penetr Yes - 1.00000 10 Tc, T penetr Yes - 1.00000 <!--</td--><td>New template Ch. Func. Assignment Label Cal. Allowed Input Output M Val B Val 00 0-10 Vdc Press No 0-10 0-5 0.50000 0.00 01 Tc, T penetr drain Yes - - 1.00000 -0.01 02 Tc, T penetr drain Yes - - 1.00000 -0.01 03 Tc, T penetr Yes - - 1.00000 -0.01 04 Tc, T penetr Yes - - 1.00000 -0.01 05 Tc, T penetr Yes - - 1.00000 -0.01 05 Tc, T penetr Yes - - 1.00000 -0.01 06 Tc, T penetr Yes - - 1.00000 -0.01 07 Tc, T penetr Yes - - 1</td></td></td<>	rator - Template Config. New template New template Ch. Func. Assignment Label Cal. Allowed Input 00 0-10 Vdc Press No 0-10 01 Tc, T penetr drain Yes - 02 Tc, T penetr drain Yes - 03 Tc, T penetr drain Yes - 04 Tc, T penetr Yes - 0 05 Tc, T penetr Yes - 0 - 05 Tc, T penetr Yes - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 -<	New template Ch. Func. Assignment Label Cal. Allowed Input Output 00 0-10 Vdc Press No 0-10 0-5 01 Tc, T penetr drain Yes - - 02 Tc, T penetr drain Yes - - 03 Tc, T penetr Yes - - - 04 Tc, T penetr Yes - - - 05 Tc, T penetr Yes - - - 05 Tc, T penetr Yes - - - 06 Tc, T penetr Yes - - - - 07 Tc, T penetr Yes - - - - 08 Tc, T penetr Yes - - - - 10 Tc, T penetr Yes	New template Config. New template Ch. Func. Assignment Label Cal. Allowed Input Output M Val 00 0-10 Vdc Press No 0-10 0-5 0,50000 01 Tc, T penetr drain Yes - 1.00000 02 Tc, T penetr drain Yes - 1.00000 03 Tc, T penetr Yes - 1.00000 04 Tc, T penetr Yes - 1.00000 05 Tc, T penetr Yes - 1.00000 05 Tc, T penetr Yes - 1.00000 06 Tc, T penetr Yes - 1.00000 07 Tc, T penetr Yes - 1.00000 08 Tc, T penetr Yes - 1.00000 10 Tc, T penetr Yes - 1.00000 </td <td>New template Ch. Func. Assignment Label Cal. Allowed Input Output M Val B Val 00 0-10 Vdc Press No 0-10 0-5 0.50000 0.00 01 Tc, T penetr drain Yes - - 1.00000 -0.01 02 Tc, T penetr drain Yes - - 1.00000 -0.01 03 Tc, T penetr Yes - - 1.00000 -0.01 04 Tc, T penetr Yes - - 1.00000 -0.01 05 Tc, T penetr Yes - - 1.00000 -0.01 05 Tc, T penetr Yes - - 1.00000 -0.01 06 Tc, T penetr Yes - - 1.00000 -0.01 07 Tc, T penetr Yes - - 1</td>	New template Ch. Func. Assignment Label Cal. Allowed Input Output M Val B Val 00 0-10 Vdc Press No 0-10 0-5 0.50000 0.00 01 Tc, T penetr drain Yes - - 1.00000 -0.01 02 Tc, T penetr drain Yes - - 1.00000 -0.01 03 Tc, T penetr Yes - - 1.00000 -0.01 04 Tc, T penetr Yes - - 1.00000 -0.01 05 Tc, T penetr Yes - - 1.00000 -0.01 05 Tc, T penetr Yes - - 1.00000 -0.01 06 Tc, T penetr Yes - - 1.00000 -0.01 07 Tc, T penetr Yes - - 1

Template - F Configuration

Define the type of study: distribution or penetration Click on F Config, right click in the window and select all or only the channels to be used for penetration

🙀 F V.	alue Config				_ 🗆 🗙
Chan	List Config				Ok
F	Ch.	Func.	Assign.		<u></u>
	00	0-10 Vdc	Press		Cancel
	01	Tc, T	temp		
	02	Tc, T	temp	Select ALL	
	03	Tc, T	temp	UNSelect ALL	
	04	Tc, T	temp		-
	05	Tc, T	temp		
	06	Tc, T	temp		
	07	Tc, T	temp		
	08	Tc, T	temp		
	09	Tc, T	temp		
	10	Tc.T	temp		

A M			
Char	List Config		
F	Ch.	Func.	Assign.
	11	Tc, T	temp
	12	Tc, T	temp
	13	Tc, T	temp
	14	Tc, T	temp
	15	Tc, T	temp
	16	Tc, T	temp
	17	Tc, T	temp
	18	Tc, T	temp
	19	Tc, T	temp
V	20	Tc, T	temp

🚟 F Value Config.

Template - steam saturation

Define the steam saturation report; in order to be able to do it you need to define at least one pressure channel. Click on "Steam saturation" and define the channels which are going to be used for steam saturation calculations based on temperature and pressure channel.

Generally the tolerance accepted is \pm 50 mBar absolute, but user will enter this tolerance based on internal SOP.

Enable Steam Satur	stion		
Temperature Chan.	01 - temp	~	Cancel
Pressure Chan.	00 - Press	~	
Pressure Unit	bar	~	
Tolerance (+/-)	0,050 bar	•	

Template - calibration and verification configuration

Click on "Calib Config" to define the calibration and verification configuration

Follow instructions defined in the "Calibration / Verification Configuration" module to configure the calibration and verification in the template.

Template - virtual channels

Use has the ability to insert his own calculations which will be displayed as separate channels in test report. Examples of calculations:

Maxval=max(@01:20); MinVal=min(@10:20); Delta=max(@01:20)-min(@01:20)

The test report will automatically have th extra channels: MaxVal, MinVal and Del

		1ª	🖁 Virtu	al Chan	nels							_ 🗆 2
		E	Expressi	ion							<u> </u>	Πk
		M Mi De	axval=n inVal=m elta=ma	nax(@01: in(@10:2 x(@01:20	:20); 20); 0)-min(@	01:20)				(ancel
ee												
9 9												
a.				data Canfo								
	Actions	Automistrat	New te	mplate	y.							
	Housing		Ch.	Func. A	ssignmen	Label	Cal. Allowed	Input	Output	M Val	B Val	Dec.
	Save		00	0-10 Vdc	Press		No	0-10	0-5	0.50000	0.00	3
	Configuration	۲	01	Tc, T	penetr	drain	Yes	-	-	1.00000	-0.01	2
		Ĭ	02	Tc, T	penetr		Yes	-	-	1.00000	-0.01	2
	F Config		03	Tc, T	penetr		Yes	-		1.00000	-0.01	2
	Steam Saturation		04	Tc, T	penetr		Yes		•	1.00000	-0.01	2
	Calib. Config.		05	Tc, T	penetr		Yes			1.00000	-0.01	2
	Virtual Chann.		06	Tc, T	penetr		Yes		•	1.00000	-0.01	2
	Add Info		07	Tc, T	penetr		Yes	•	•	1.00000	-0.01	2
	Input		08	Tc, T	penetr		Yes	-	-	1.00000	-0.01	2
	mpac	~	09	Tc, T	penetr		Yes	-	•	1.00000	-0.01	2
	🔏 Input Module		10	Tc, T	penetr		Yes	-		1.00000	-0.01	2
	All Assigned		11	Tc, T	distrib		Yes		•	1.00000	-0.01	2
			12	Tc, T	distrib		Yes	1.1		1.00000	-0.01	2
	View	۲	13	Tc, T	distrib		Yes	1		1.00000	-0.01	2
	🆧 Grid		14	Tc, T	distrib		Yes			1.00000	-0.01	2
	Beport		15	Tc, T	distrib		Yes	-	•	1.00000	-0.01	2
1			16	Tc, T	distrib		Yes	-	•	1.00000	-0.01	2
uai			17	Tc, T	distrib		Yes	-	•	1.00000	-0.01	2
nnels			18	Tc, T	distrib		Yes	-		1.00000	-0.01	2
mens			19	Tc, T	distrib		Yes			1.00000	-0.01	2
			20	Tc, T	distrib		Yes			1.00000	-0.01	2
			Maxval				No	-	-	-	-	2
		(MinVal				No	-	-	-	-	2
			Delta				No	-	-	-	-	2

Template - add info

This menu is used for adding comments in the header of the report

鱰 Comment		×
Description		_
Templates for autoclaves	OK OK	
	Cancel	

×

oclave" saved

After having configuring the template click "Save" to save existing configuration.

New Template	×	Info
Input Template Name Template for autoclave		Template "Template for aut
OK Cancel		С

Template - view report

Open the template report saved previously and click on "Report" to view the template report.

🚝 XValFL 1.0.0.6 - No login - Administrat	tor - Template	Config.									_ 🗆 ×			
Actions	† 100%													
Save	Template	,						{C	B50E513-25BA	4606-83AC-70	Page 1 of 1			
Configuration 🛞								Printed: 12/0	6/2005 15:50:	ið, from: C:WV	alFI_0.6\fl.dfl			
F Config Steam Saturation	YvalFL 1.0.0.6 Templates for a F Config Ste Steam Saturati	Normanne, formanne, for autoconvet Xapel I. 0.0. 6. % 12674-01037-000-10682 - Licensed to: Evaluation Templates for autoclaves F Config Steam: Zulaue+ 410.0 °C; To Temp.= 4211.0 °C; Min. Temp. To Calo. F Value= 4118.0 °C Steam Saturation: Temp. Cham.: 01; Press. Cham.: 00; Pressure Unit: bar; Tolerance: 0.05												
Calib. Config. Virtual Chann.	Calib: at 90 - Temp. at 130 - Temp	Callb: # 100 - Tump. = 80,0*C; Enror #Mowed = 1,0 (+/*C); Check Time = 1.00 (mm:ss) # 100 - Tump. = 131,0*C; Enror #Mowed = 1,0 (+/*C); Check Time = 1.00 (mm:ss) # 100 (mm:ss)												
Add Info	at 121 - Temp	enfy: at 121 - Temp. = 121.0 °C; Error Allowed = 0.2 (+/-°C); Check Time = 1:00 (mm:ss)												
Input 🔿	RTD: Drift Allowed	RTD: Drift Allowed = 0,10 (+/-°C); Dev. From Refer. Allowed = 2,0 (+/-°C); Check Time For Drift = 1:00 (mm:ss)												
A Input Module	Virtual channel: Maxval = Max Min\/al = Min() Detta = Max∩	Vitual (Janneli: Marval + Marv(@120) Marval = Marv@(@120) Dela = Marv@(@120). Marv@(120)												
All Assigned	Input Modu	le												
View	Chan.	Func.	Set As	Assign.	Label	Cal. Allowed	Input	Output	M Val	B Val	Dec			
	#00	0-10 Vdc	Value	Press		No	0-10	0-5	0.50000	0.00	3			
Grid	#01	Tc, T	F\/alue	penetr	drain	Yes	•	•	1.00000	-0.01	2			
🛃 Report	#02	To, T	F\/alue	penetr		Yes	•	•	1.00000	-0.01	2			
	#03	To, T	F\/alue	penetr		Yes	•		1.00000	-0.01	2			
	#04	lc, l	F \falue	penetr		Yes	•	•	1.00000	-0.01	2			
	#06	16, I To T	F value	penetr		res	•		1.00000	-0.01	2			
	#07	10, I T. T	Fvalue	penetr		Tes			1.00000	-0.01	2			
	#07	Te, T	F value	penetr		Yee			1.00000	-0.01	2			
	#00	To, T	Fialue	penetr		Vec	·	•	1.00000	-0.01	2			
	#10	To T	Fishes	penetr		Voc	·		1.00000	0.01	2			
:	#11	To T) Adva	dictrib		Ver			1.00000	-0.01	2			
	#12	To T	Value	distrib		Yes	÷		1.00000	-0.01	2			
	#13	To T	Value	distrih		Yes			1.00000	-0.01	2			
	#14	To, T	\/alue	distrib		Yes			1.00000	-0.01	2			
	#15	To, T	Value	distrib		Yes			1.00000	-0.01	2			
	#16	To, T	Value	distrib		Yes			1.00000	-0.01	2			
	#17	Te, T	Value	distrib		Yes			1.00000	-0.01	2			
	#18	To, T	Value	distrib		Yes			1.00000	-0.01	2			
	#19	To, T	∖∕alue	distrib		Yes			1.00000	-0.01	2			
	#20	To, T	\/alue	distrib		Yes			1.00000	-0.01	2			
	Maxval		Value			No					2			
	Min∿al		F\/alue			No					2			
	Delta		F\/alue			No			·	·	2 🔻			
				•										
	Page 1/1			•							Þ			

<u>3.2.7. Action – Calibration (Pre Calibration)</u>

Before starting a test study it is important to calibrate thermocouples used for test versus the reference standard in order to calculate correction parameters to be applied during the data acquisition.

After a test study, you are requested to verify in one or more points if the thermocouples are within the specifications defined in the configuration module.

Principle of calibration

- The calibration is performed by comparing individual temperature values of each thermocouple wire to the NIST (or COFRAC) independent temperature probe. A very accurate calibration can be performed if the RTD probe and the calibration block are of the highest quality as specified by LIVES International.
- XpertVal allows user to perform completely automatic hands free calibration by controlling data logger, reference probe and temperature block the block will automatically switch to Low, High and Verif set points as defined in the Calibration Configuration
- In order to perform a reliable calibration, the calibration system must be very stable. The user's entered value for deviation from reference allowed defines the acceptable range of the actual temperature as compared to the set temperature (calibration temperature).
- The calibration can be performed either in single-point or two-point mode
- The stability of the system is defined as the value of the drift of the temperature allowed within a particular check time for drift. When the calibration is started, the RTD temperature will be verified every one second for the length of the check time for drift. This is to assure that the initial conformity to the user's entered value for the drift of the temperature allowed has been satisfied. At any time, if the drift exceeds the limit, the check time will restart. The system stability is verified throughout the calibration and if at any time the calibration system stability conditions are not satisfied, the part of the calibration that was in progress will be repeated after the calibration system stability conditions have been met.
- After calibration was finished the thermocouple wires are verified to confirm that the error after calibration is within the user-specified thermocouple error allowed. This verification is performed for the duration of the check time for error and typically performed either at the same temperature (for single-point calibration) or the middle point for the Low and High temperature (for two-point calibration). Any thermocouple wire not meeting the user-specified criteria of thermocouple error allowed will be set OFF.

Performing the calibration

- The software will display the set point specified in the configuration and will wait until the temperature standard drift is stable. The calibration can start only when the drift of the temperature standard is within the limits defined by the user. Usually it is recommended to configure a drift of 0.05 °C and check time for drift a time of 1 minute. The user normally set these configurations according to the company's internal validation S.O.P. When the drift of the temperature standard is stabilized the system will start thermocouple calibration.
- In the low and high calibration points, the software records and displays the error of each thermocouple versus the temperature standard and compares it with the error defined by the user in the calibration configuration.
- If the error of a thermocouple is higher than the accepted error, the thermocouple will not be taken into consideration by the system for further operations and will be highlighted in red. The cause of errors is, in most cases, a bad insertion of thermocouples inside the well of the temperature block. In this case, if some thermocouples are highlighted in red you can cancel the calibration and verify the way in which thermocouples are inserted in the wells. If this is not the case, this means that the thermocouple wire is defective and it has to be replaced. Restart the calibration after checking the thermocouples or after replacing the defective ones.
- In order to eliminate the errors of the thermocouple versus the reference probe, the software will apply correction factors using the polynomial function y = mx+b.
- In the verification point, the software will apply the correction and verify the temperature values. Corrected values will be displayed on the screen.
- The correction factors will also appear in the calibration report as M value and B value.

In "Calibration" module, click on "New"; software will verify connections between computer and the equipment connected.

Acknowledge by clicking Ok if all connections are correct.

Click on "Start" to start the calibration and enter the calibration name

	Actions	鱰 Equipment Verification	
	Actions	Instrument	
	<u>Start Calib.</u> Calib. Config.	FLUKE 26364 6357302 M6 9 A5 02 01 0.10.8 - 1/38400 - 58573021 - Unit: *C 260-VPC- Instrument Time 1500 042 / 12-juin 05 Instrument-PC Time Synchro will be performed when required Memory Card is UK - Size 256 K - Free 247 K - Num. 01 Files 0	Qk Cance Format
		Probe	
		LIVE'S Ext - 6/3600 - f23154-03 - Unit "C Turner +93,955"C Ventication of Serial Number is Recommended	/
Choose the template to be use	ed.		
Double check the calibration	configuration: drag the mouse	Block	
o "Calibration configuration"	" and don't click on it. The info bull	LIVES - 3125, ATC-1578 - 6/3600 - 524435-00141 - Unit: "C Control: External	
with calibration configuration	n will be displayed on screen.		
Coloct Template		J	
Name			
Template for autoclave	12/06/05 15:46:51		
Template for freeze dryer	12/06/05 16:05:11		
		🛣 XX alf1 1.8.8.4 - Yu Isisi - Administratur - Calibration	
		Actives Callendon-Net Stand On Purc. Assign. Label Status Car Value Car Bills. Any Bills.	Max ERP.
		Subscription 00 0-19 Vot Press Disabled Calls.Codia V 00 7c, T periody drain Value	
		Collination Configuration Collination Collinatio Collination Collinatio Collinatio Collinatio	
		Alid at 90 - Ferg. = 0000°C throw Abored = 1.0 (+1×C). One's Time = 1.00 (mov co) Value at 100 - Ferg. = -0100°C throw Abored = 1.0 (+1×C). One's Time = 1.00 (mov co) Value Vers Value Value	
		R: Lot: - Hello: = 122(J)=2; ptrote weblete = 0,22(y)=2; ptrote: Hell = 100 (ptrots) Value R: Gird Coff: Moved = 0,10 (+/-C); Core: From Safer. Moved = 2,0 (+/-C); Check Teer For Daft = 1.00 (ptrots) Value	
		Vidua ↓ 11 TC, T dotrib ↓ 11 TC, T dotrib	
		₩ 12 fc, T detroit Value ₩ 13 fc, T detroit Value	
		₽ 15 Tc, T dotrol Water ₽ 15 Tc, T dotrol Water	
		V 17 Tc, T debrie Value V 18 Tc, T debrie Value	
w Calibration	X	V 19 Tc, T detroit Value V 20 Tc, T detroit Value	
Input Calibration Name			
Calibration autoclave			
OK Cancel			

After calibration started the software will first check the drift, when the drift is within the specifications, the software will start thermocouple calibration.



Start Calib. Calib. Config								1 1		
Start Calb. Calib. Config.		Ch.	Func.	Assign.	Label	Status	Cur Value	Cur ERR.	AvgERR	Max ERR
Calib. Conhg		00	0-10 Vdc	Press		Disabled				
		01	Tc, T	penetr	drain	ОК	120,54	0,06	0,060	0,06
Input	Ref 1	02	Tc, T	penetr		ок	120,53	0,05	0,050	0,05
		03	Tc, T	penetr		ОК	120,52	0,03	0,030	0,03
A Input Module	P	04	TC, T	penetr		ОК	120,53	0,05	0,050	0,05
All Assigned	P	05	Tc, T	penetr		OK	120,52	0,03	0,030	0,03
Minus		06	Tc, T	penetr		OK	120,52	0,03	0,030	0,03
VICW	· · ·	07	Tc, T	penetr		OK	120,52	0,03	0,030	0,03
🧏 Grid	P	08	Tc, T	penetr		ок	120,55	0,06	0,060	0,06
Report		09	Tc, T	penetr		ок	120,54	0,06	0,060	0,06
Trend	2	10	Tc, T	penetr		ок	120,52	0,03	0,030	0,03
		11	Tc, T	distrib		ок	120,52	0,03	0,030	0,03
	1	12	Tc, T	distrib		ок	120,54	0,06	0,060	0,06
	1	13	Tc, T	distrib		ок	120,53	0,05	0,050	0,05
	8 💌	14	Tc, T	distrib		OK	120,55	0,06	0,060	0,06
	1	15	Tc, T	distrib		OK	120,52	0,03	0,030	0,03
	8 💌 I	16	Tc, T	distrib		OK	120,52	0,03	0,030	0,03
		17	Tc, T	distrib		OK	120,54	0,06	0,060	0,06
	P	18	Tc, T	distrib		OK	120,52	0,03	0,030	0,03
		19	Tc, T	distrib		OK	120,55	0,06	0,060	0,06
		20	Tc, T	distrib		ОК	120,54	0,06	0,060	0,06
								\lor		

Trend during calibration



Double click to open

When calibration is ready the calibration report will be saved in the calibration reports list

Actions			Name	A Performed	Instrument	GUID
Actions	~		Calibration autoclave	12/06/05 17:31:15	63573021	{CDD25391-84BB-48AB-98DC-2B8E3F017981}
Open		1				

-8.68 -8.63 -8.65 Harry 1.5.14 (IV) 2017/01017002 (IV) Conversed to Evolution Particle M 020227 (IV) 444 (IV) 1.7.144 (IV) 444 (IV) 1.7.144 70.00 - 06,948 - 02,000 - 05,900 Cancel Inc. 2 Same Inc. 2 Same Inc. 2 Cancel Inc. 2 Cancel Inc. 2 Same Inc. 2 Same Inc. 2 **+** 75% 8

Save, print or send to excel file using the task bar above the report. The reports can be saved as : Report file (*.frp)

- report file
 - text file
 - HTML file
 - csv file
 - bmp file _
 - excel _
 - pdf file

Error messages

Three types of error messages may appear during a calibration:

Err(L)

_

- Err(H)
- OTC (or P_OL or N_OL)

The Err (L) or Err (H) messages means the error is lower (L) or higher (H) than the accepted error defined by the user. Possible causes:

Report file (*.frp) ASCII Text file (*.txt)

Rich Text file (*.rtf) HTML file (*.htm) CSV File (*.csv)

BMP file (*.bmp)

kcel D<u>ocumen</u>

Adobe Acrobat Doci

- The thermocouple is not inserted enough in the well.
- The thermocouple wire is not a good quality wire and can not support the specifications defined _ by the user

ment (* odi

Ŧ

OTC error means open thermocouple. This error will appear when:

- The thermocouple wire is cut
- The thermocouple is not connected to the data logger
- The thermocouple is oxidized above the limits _

3.2.8. <u>Action – Verification (Post Calibration)</u>

After either one or a succession of tests, the user is asked to verify that the thermocouples used are still within the specifications defined by the user at the beginning of the test. This operation is called Verification or Post calibration.

In "Verification" click on New to start a Verification.

The equipment connected to the computer will be verified; click Ok to proceed.

鱰 Equipment Verification	_ _ X	鱰 Yerification mode	_ 🗆 X
Instrument FLUKE 2635A 6357302 M6.9 A5.02 D1.0 L0.8 - 1/38400 - 63573021 - Unit: "C 2604/PC - Instrument Time: 18-24-26 / 12-juin-05 Instrument-PC Time Synchrowilbe performed when required Memory Card is DK - Size 256 K - Free 238 K - Num. Of Files 1 Decke	Cancel Format MC	Search for Calibration Verification w/o Calibration Name Created Calibration autoclave 12/05/05 17:31:15	Réduire Cancel
LIVES Ext - 6/9600 - 529154-03 - Unit: "C Temp: +121,098"C Verification of Serial Number is Recommended	~		
Block LIVES - 3125, ATC-157B - 6/9600 - 524435-00141 - Unit. "C Control: External	~		

Choose the verification mode:

- search for calibration
- verification without calibration

If a pre calibration have been previously performed it will be displayed in the calibration found list. Select the calibration and proceed.

Double check the verification configuration by dragging the mouse on Verification Configuration.

Actions	ا (/enification - Not Start	ed			
Ph. 191.71		Ch.	Func.	Assign.	Label	Status
Start Vent.		00	0-10 Vdc	Press		Disabled
Vent. Conng.	P	01	Tc, T	penetr	drain	Yalue
Input	A 1	02	Tc, T	penetr		Value
		03	Tc, T	penetr		Yalue
Input Module	R	04	Tc, T	penetr		Yalue
All Assigned		05	Tc, T	penetr		Value
M.		06	Tc, T	penetr		Yalue
VICW	× 🗸	07	Tc, T	penetr		Yalue
Grid	V	08	Tc, T	penetr		Value
		09	Tc, T	penetr		Value
	V	10	Tc, T	penetr		Yalue
	V	11	Tc, T	distrib		Value
		12	Tc, T	distrib		Value
	V	13	Tc, T	distrib		Yalue
		14	Tc, T	distrib		Value
		15	Tc, T	distrib		Value
		16	Tc, T	distrib		Yalue
		17	Tc, T	distrib		Value
		18	Tc, T	distrib		Value
	i 💌	19	Tc, T	distrib		Value
	i 🗸	20	TC, T	distrib		Yalue

Actions	😞 Ve	rification - Not Starte	ed			
Chentland		Ch.	Func.	Assign.	Label	Status
Start Venil.		00	0-10 Vdc	Press		Disabled
Verr. Loging		01	Tc, T	penetr	drain	Value
Input Verification Fo	onfiguration					Value
						Value
Input M Verify: at 121 - Temp.	= 121.0°C: Error Allow	ed = 0.2 (+i-°C):	berk Time = 1:00 (mm):	(10)		Value
All Assi RTD:	0.40(1107).0	and an all and	0.0(+105) ch +1 T			Value
Minue Minue Allowed =	: 0,10 (+)-*C); Dev. Pro	m Kerer. Allowed =	= 2,0 (+)-*C); Check IIm	e Por Drift = 1:00 (mm:ss)	, I	Value
VIEW						Value
Grid		08	Tc, T	penetr		Value
	v	09	Tc, T	penetr		Value
		10	Tc, T	penetr		Value
		11	Tc, T	distrib		Value
		12	Tc, T	distrib		Value
		13	Tc, T	distrib		Value
		14	Tc, T	distrib		Value
		15	Tc, T	distrib		Value
		16	Tc, T	distrib		Value
		17	Tc, T	distrib		Value
		18	Tc, T	distrib		Value
	1	19	Tc, T	distrib		Value
	8 -	60		1.4.1		

Start verification : click on "Start" and enter the name of the verification.

After the verification was finished acknowledge the message "Verification successfully completed" - the verification report will be added on the verifications list .

🗑 XValFL 1.0.0.6 - No login -

New Verification	×	Info	×
Input Verification Name Verification autoclave	-	(į)	Verification successfully completed.
OK Cancel			ОК

Double click to open verification report.

🚾 XValFL 1.0.0.6 - No login - Administ	trator - Verificatio	n																						_ 8 ×
Actions	+ 100%	- 8 d -)																					
Save Report As																								~
Input 🔅	Verificati																			100	#077%3_I	1118.417	1.6803.0	Page 1 of 1 78/F78/D1265
2 Institute	verificati	on Report																	Print	ed: 12/06	/2005 18	40:57, 1	um: 0:00	AIFI 0.6/1.41
CS Inportection	Verification	(Template): Verific	ation aut	oclave	(Templ	ate for	r autoc	ave)																
AllAssigned																								
View 🖇	XVAIFL 1.0.0.6 Hydra 1d: 6357 Block: LIVES 3	XMF1 LB45 VP: 20F49105-100021002 - Locosoft to Enduation hypotha dis 532302, arXiv: https://database.it.lb/db10.bbm.mil/stan.html: 5109 Book. Lb55 3125, AFC 5979; 316: 5346546146; Ed Cortent, How: Lb65 Ed; 316: 5345460 Molty:																						
3 Benot	at 121 - Temp	= 121,0°C; Error Allowe	d = 0.2 (+/-	C): Che	ok Time =	1:00 (r	m:ss)																	
Tuesd	RTD: Diff Alcored a	0.10 GANCE Dev. Free	n Refer di	keed a 2	0.0450	Cherk	Time For	Det a 1	00 (nm															
Tiend	Action	Date & Time	Probe	A00	101	#02	100	804	#05	806	#07	NCC .	#29	#10	#11	#12	#12	#14	#15	#15	#17	#10	#19	#20
Frend Heport	Funo.	(dd/mm/yy		0-10 \/6	To, T	Te, T	To, T	To, T	To, T	To, T	70, T	To, T	Te, T	To., T	To, T	To, T	To, T							
Settings 🄇	Set Ar Used Calib.	10/10/26/		N/A	\ddus	Válue	1deau	\ske	Value	\debae	Value	\dea	\alue	Value	\ddaa	Value	\ditae	Value	\delan	\\$tue	Value	\ddus	Value	\dia
Add Info	Calibration as	tockrve				0 Y	~	0.11	~	01/	~	~	0.4	~	0.11	~	014		~	0 ¥	~	01/	~	<i>0V</i>
	Carlo, Matus	M-Val		1.	1.00142	1.00640	1,00528	1.00096	1.00440	1.00655	1.00650	1.00493	1.00626	1.03432	1.00000	1.00418	1.00295	1.00412	1.00413	1.00069	1.03449	1.00535	1.00930	00745
Filter		8-144			-0.77	-0.70	-0.73	-0.87	-0.70	-0.75	-0.76	-0.77	-0.75	-0.58	-0.44	-0.53	-0.50	-0.58	-0.51	-0.54	-0.60	-0.53	-0.82	-0.51
Rebuild Report		Label			drain																			
₩ #00	Werif. at 121	12/06/05 18:33:39	+120,501		0.02	0.01	0.02	0.00	0.02	0.01	0.02	0.01	0.01	0.00	0.03	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.02
₩ #01		12/06/05 18:33:47	+120,408		0.02	0.01	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.02
F #02		12/06/05 10:33:55	+120,497		0.04	0.01	0.02	0.02	0.00	0.02	0.01	0.03	0.00	0.02	0.01	0.02	0.00	0.02	0.01	0.02	0.02	0.02	0.02	0.02
HU2		12/06/05 10:04:11	+120,500		0.00	0.00	0.04	0.06	0.03	0.05	0.05	0.05	0.07	0.04	0.05	0.05	0.04	0.05	0.03	0.04	0.05	0.05	0.05	0.04
#03	8	12/06/05 18:34:19	+120,508		0.15	0.11	0.11	0.14	0.11	0.13	0.13	0.11	0.14	0.10	0.11	0.13	0.12	0.13	0.11	0.12	0.12	0.13	0.14	0.12
₩ #04		12/06/05 18:34:27	+120,520	1	0.07	0.04	0.03	0.05	0.03	0.04	0.04	0.05	0.04	0.01	0.02	0.03	0.03	0.04	0.02	0.02	0.05	0.03	0.03	0.03
₩ #05	8																							
₩ #05		Min.	+120,497		0.02	0.01	0.00	02.0	0.00	0.01	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.00	010	0.00	0.02
₩ #07		Avg. Max.	+120,507	1.1	0.055	0.035	0.035	0.048	0.11	0.040	0.13	0.11	0.061	0.10	0.035	0.13	0.030	0.13	0.031	0.12	0.12	0.033	0.14	0.043
HOP HOP																								
H 400	Status				0K	OK:	0K	0K	0K	0K	OK:	0K	OK:	0K	0K	0K	0K	OK:	0K	0K	0K	0K	OK:	0K
H03																								
₩ #IU																								
IM #11																								
₩ #12																								
✓ #13																								
₩ #14																								
₩ #15																								
	Burlament 120	10.00.01							~															
H17	Parteniae 120	10.20.51											_											
E HIO																								
- #10																								
#19																								
₩ #20																								
																								1
																								-
	Page 1/1									-	-												-	•

Click on "Add info" for adding comments in the header of the verification report

鱰 Comment		×
Description		_
comments for verification report	Cancel	

3.2.9. Action – Test

To start a new test go in "Test" - "New"; connection with data logger will be verified before starting the test.



Three options are available to start the test:

- clear Hydra and search for calibration _
- clear Hydra and test without calibration -
- upload configuration from Hydra and continue test _

Start new test using option: "clear Hydra and search for calibration" Software will automatically display the calibration

reports available for the report;

by default the last one is highlighted. choose one and click Ok.



The configuration screen will appear;

Double check the configuration - by default the configuration as described in the template used for calibration will be used.

F Value configuration



Steam Saturation

Acti

View

A Grid



Saturation configuration



Reset Data: Conditions Not Set

Stop Test: Conditions Not Set

Test configuration

Virtual channel configuration

Act	ions	۲
Sta	rt Test	
F 0 Sa <u>Virt</u> o Ado	Virtual Chann. Con Maxval=max(@01:20 MinVal=min(@10:20); Delta=max(@01:20)-	fig)); min(@01:20)

If you need to modify anything in the configuration you can make it now, otherwise click on "Start" to start the test. As described, two types of studies are available:

- Distribution (Value) used for mapping the sterilization equipment (no F value calculations)
- **Penetration** (Fvalue) used for studying the effect of the temperature inside the product: temperature value acquisition and F value calculations.

Test configuration

Define data acquisition interval "Intervals"

In the test configuration click on the "Cfg".

Define the support you want data to be stored on:

- save to Hydra memory card (save all data on the PCMCIA card of data logger)
- Save to Dbase (save all data in data base of the computer)

🎉 Test Config.	_
Intervals By Time By Value	1
 Save To Hydra Memory Card 	
Fast Hydra Scan Rate	
Hydra Interval (hrmm:ss) 0.08	
Save To Database	
Qk	Cancel

Define data acquisition speed – enable or disable "Fast Hydra Scan Rate" Define data acquisition interval by using the up and down arrows.

The minimum data acquisition interval is 1 second.

Data acquisition interval in the data base is equal or multiple of Hydra data acquisition interval.

WARNING

Data accuracy is decreased when "Fast Hydra Scan Rate" option is used.

n Rate: FAST

ChOS	Ch04	ChOS	Ch06	Ch07	Ch08	Ch09	Ch10	Chll	Т
Tc, T	Tc, T	Tc, T	Tc, T	Tc, T	Tc, T	Tc, T	Tc, T	Tc, T	•
empt	tempt	t							
Value	Value	Value	Value	Value	Value	Value	Value	F_Value	F
No	No	No	No	No	No	No	No	No	
1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	
-0,01	-0,01	-0,01	-0,01	-0,01	-0,01	-0,01	-0,01	-0,01	
Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	
-	-	-	-	-	-	-	-		
^									
22,0	+22,50	+22,30	+22,50	+22,50	+22,60	+22,50	+22,50	+22,30	+
22,00	+22,30	+22,30	+22,50	+22,50	+22,60	+22,30	+22,10	+22,00	+
22,30	+22,30	+22,10	+22,40	+22,40	+22,40	+22,30	+22,10	+22,10	+
22,00	+22,30	+22,10	+22,40	+22,30	+22,40	+22,30	+22,30	+21,90	+
22.00	+22,30	+22,10	+22,40	+22,30	+22,40	+22,30	+22,30	+21,90	+

Ch04	Ch05	Ch06	Ch07	Ch08	Ch09	Ch10	Chll
Tc, T							
tempt							
Value							
No							
1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
-0,01	-0,01	-0,01	-0,01	-0,01	-0,01	-0,01	-0,01
Deg.							
							-
^							
+21,74	+21,60	+21,79	+21,60	+21,72	+21,54	+21,56	+21,34
+21,76	+21,58	+21,78	+21,60	+21,72	+21,60	+21,58	+21,34
+21,74	+21,62	+21,77	+21,62	+21,74	+21,58	+21,56	+21,36
+21,77	+21,60	+21,77	+21,62	+21,72	+21,58	+21,54	+21,36
+21,77	+21,60	+21,79	+21,62	+21,72	+21,60	+21,54	+21,38
+21,77	+21,61	+21,79	+21,65	+21,75	+21,61	+21,57	+21,38
+21,77	+21,61	+21,77	+21,63	+21,73	+21,57	+21,57	+21,38
+21,15	+21,61	+21,79	+21,63	+21,73	+21,57	+21,57	+21,36
V							

Fast Hydra scan rate used

Fast Hydra scan rate not used

Delayed Start, Reset or Stop data acquisition

By Time

Data acquisition can be configured by the user for delayed start, reset or stop.

🧱 Test Config.	- IX
Intervals By Time By Value	
 Enable Time Triggered Start Of Data Collection 	
Reset even if Data Collection Already Started	
Start Time Today 🗘 Hrx 18 🗘 mmx 44 🗘	
Enable Time Triggered Data Reset	
Reset Time Today 🔍 Mr. 18 🗘 mm. 44 🗘	
☑ [Enable Time Triggered Test Duration]	
End Time Today 🗘 Hhr. 18 🗘 mmx 44 🗘	
	ancel

- Automatic start of data acquisition: data acquisition will start at a moment defined by the user.
- Automatic reset of data acquisition: data acquisition will be reset at a certain moment defined by the user.
- Automatic stop of data acquisition: data acquisition will stop at a moment defined by the user

An error message appears if the time interval is not defined correctly

XValFL 1	.0.0.6	×
\bigotimes	Start Time in the p	bast.
	ОК	

By Value

Enable Start based on Temperature Value

Principle of operation:

In order to Start, Reset or Stop the test based on the temperature or F Value it is necessary to program the conditions to be satisfied for performing this operations. First define the type (Value or First or All or Average); Then define the channel (or group of channels) Then define the "assignment" or "set as" for this group of channels Then define the condition : above or below Then define the value of the temperature of F Value

Data acquisition can be programmed based on

- value of
- F value
- value avg.
- current channel ...
- any assigned as ...
- any set as ...

🎏 Test Config.	- 🗆 🗙	鱰 Test Config.	_ 🗆 🗙	🚝 Test Config.	
Intervals By Time By Value		Intervals By Time By Value		Intervals By Time By Value	
Enable Value Triggered Start Of Data Collection		 Enable Value Triggered Start Of Data Collection 		 Enable Value Triggered Start Of Data Collection 	
Reset even if Data Collection Already Started		Reset even if Data Collection Already Started		Reset even if Data Collection Already Started	
Current Value V of Channel V 0 V < V 100,0	8	Current Value V of Channel V 0 V < V 100,0	•	Current V Value V of Channel V 0 V < V 100,0	
Any All		Voluc F Voluce Voluc Avg.		10 1 0	
 Avg. cnauer vaue Triggered Data Reset 		 Enable Value Triggered Data Reset 		Enable Value Triggered Data Reset	
Reset Only on Return Pass Through the Value		Reset Only on Return Pass Through the Value		Reset Only on Return Pass Through the Value	
Current V Value V of Channel V 0 V (V 100,0		Current Value V of Channel V 0 V < V 100.0		Current Value Vol Channel V 15 V < 100,0	
Enable Value Triggered Test Duration		Enable Value Triggered Test Duration		Enable Value Triggered Test Duration	
Current V Value V of Channel V 0 V < V 100.0	3	Current Value V of Channel V 0 V (V 100,0		Current V Value V of Channel V 0 V < V 100,0	٢
k Car	icel	<u>Ok</u>	Cancel		Cancel

- any channel

above or below a temperature defined by the user

above or below a temperature defined by the user

of all assigned as ...of all set as ...

- 🗆 ×

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•

Cancel

est Config.	_ 🗆 🗡	🚝 Test Co	nfig.									
tervals By Time By Value		Intervals	By Tim	ne B	y Value							
Enable Value Triggered Start Of Data Collection		💌 En	ible Val	lue Tri	ggered S	tart Of	Data Colle	ction				
Reset even if Data Collection Already Started			Resete	even if	Data Co	lection	n Already S	tarted				
Any Value V of All Assigned as V Press V < V 100,0	•		ny	~	Value	~	of All Assi	gned as	~	Press	v <	 100
Value F Value Value Avr							of All Assi of All Set	gned as as				
Enable Value Triggered Data Reset		🗹 En	ible Val	lue Tri	ggered D	ata Re	eset					
Reset Only on Return Pass Through the Value			Reset (Only or	n Return	Pass T	í hrough th	e Value				
Current Value V of Channel V 0 V < V 100.0	•	C.	rrent	~	Value	~	of Cha	nnel	~	0	v <	· 🗸 100
Enable Value Triggered Test Duration		💌 En	ible Val	lue Tri	ggered T	est Du	iration					
Current V Value of Channel V 0 V <	•	Cu	ent 💉	•	Value	~	of Char	nel	~	0	~ <	✓ 100,
c	ancel											Qk

		erni Data Ct	ALEC U U	Aready started				_	_	
Anj	, v	Value	~	of All Assigned as	~	Press	~	<	▼ 100,0	6
						penetr distrib				
Enabl	le Valu	e Triggered D	ata Re	rset						
B	sset f) r	lu on Beturn	Pass 1	brough the Value						
Curre	ent 🗸	Value	~	of Chappel	~	0	~	2	✓ 100.0	
		Tatto							100,0	
Enabl	la Vales	a Trippered 1	art Dr	ration						
- CHAD		, mggalea i	UN DU	100011						
Curren	nt 💌	Value	~	of Channel	*	0	~	<	✓ 100,0	0

all channels -

- above or below a temperature defined by the user
- of all assigned as ... of all set as ...

_

_

🦉 Test Config. - I × Intervals By Time By Value Enable Value Triggered Start Of Data Collectio Reset even if Data Collection Already Stated
 All
 Values
 Values ✓ < ✓ 100.0 0 F Values Value Avg's. 🖌 Enable Reset Only on Return Pass Through the Value
Current Value Value of Channel V ✓ < ✓ 100,0 0 Enable Value Triggered Test Duration Current Value Value of Channel ✓ < ✓ 100,0 • ~ 0 Qk Cancel



A values of nonspecta a value of a valu	F	leset ev	en if Data Co Values	lection	Already Started		Proce		7	¥ 100.0	_
Enable Value Tiggered Data Reset Reset Only on Return Pars Through the Value Current V Value V of Channel V 0 V < V 100.0 Enable Value Tiggered Test Duasion Current V Value V of Chernel V 0 V < V 100.0			Values		or Assigned as		Press penetr distrib			100,0	
Reset Only on Return Pars Through the Value Current V Value V of Durrent V 0 V < V 100.0 Enable Value Triggered Test Duration Current V Value V of Durrent V 0 V < V 100.0	🖌 Enat	ole Value	e Triggered D	lata Re	set						
Current Value of Channel 0 v c v 100.0 Image: State Triggered Test Duration Enable Value Triggered Test Duration 0 v c v 100.0	F	leset Or	ly on Return	Pass T	hrough the Value						
♥ Endele Value Toggered Test Duration Current V V 0 V <	Curr	ent 🗸	Value	~	of Channel	~	0	~	<	✓ 100,0	
	Enal Curre	ole Value ent 🔽	e Triggered T Value	est Du	ration of Channel	~	0	v	<	✓ 100,0	

average of _

- above or below a temperature defined by the user
- of all assigned as ... _ _
- of all set as ...



Test Config.											
ntervals By T	ime	By Value									
Enable V	alue	Triggered St	art Ol	Data Collection							
Rese	t eve	n if Data Col	ectio	n Already Started							
Avg	~	Value	۷	of All Assigned as	~	Press	۷	<	~	100,0	•
				of All Assigned as of All Set as							
Enable V	alue	Triggered Da	sta R	eset							
Rese	t Only	on Return F	ass	Through the Value							
Current	~	Value	~	of Channel	¥	0	~	<	~	100,0	•
Enable V Current	alue	Triggered Te Value	est Du	ration of Channel	~	0	~	<	~	100,0	
					_			_	_		
									2	lk	Cancel

	Config.										_1
terv	als By T	lime	By Value								
•	Enable \	/alue i	Triggered St	tart Ol	Data Collection						
	🖌 Rese	t ever	n if Data Coll	lectio	n Already Started						
	Avg.	~	Value	~	of All Assigned as	~	Press	~	<	✔ 100,0	0
							Press penetr distrib				
•	Enable \	/alue i	Triggered Da	ata R	eset						
	🗌 Rese	t Only	on Return F	Pass	Through the Value						
	Current	~	Value	~	of Channel	~	0	~	<	▼ 100,0	•
	Enable \	/alue '	Triggered Te	est Du	utation		0			¥ 100.0	
	CONTONN.		1000			-				100,0	

The Reset of the test can be programmed based on temperature value or F Value, options are similar to the previous option (Enable Start based on Temperature Value) even for the F Value.

	• Hese	t ever	iif Data Col	ection .	Already Started	_				_	
	Avg.	~	Value	v 0	f All Assigned as	~	Press	~	<	100,0	-
-											
2	Enable V	alue 1	riggered D	sta Res	et						
	Rese	t Only	on Return f	Pass Th	rough the Value						
	Current	~	Value	~	of Channel	~	0	~	<	100,0	\$
	Current										
	All										
	Avg.	aue '	riggered Te	est Dura	ation						
/	Etraple A					_				100.0	
	C aut		12.1								
•	Current	~	Value	~	of Channel	~	U	*	< •	100,0	
	chable v					_				100.0	

Stop Test based on Temperature or F Value

The Reset of the test can be programmed based on temperature value or F Value, options are similar to the previous option (Enable Start based on Temperature Value) even for the F Value.

erv	als By Tir	ne By∖	/alue						
~	Enable Va	lue Trigg	, ered Start	Of Data Collection					
	Reset	even if D	ata Collec	tion Already Started	3				
	Avg.	v v	alue	 of All Assigned 	as 🗸	Press	~	< 🔽 100,0	•
_									
•	Enable Va	lue Trigg	ered Data	Reset					
	Reset	Jnly on F	leturn Pas	s Through the Valu	Je				
	Current	• v	alue	 of Channel 	~	0	~	< 🖌 100,0	\$
•	Enable Va	lue Trigg	ered Test	Duration					
	Current	v va	alue 🔻	of Channel	~	0	v <	▼ 100.0	•
							_		
	Current	1							
	Current Any All								
	Current Any All Avg.								
	Current Any All Avg.								

Start Test

.

In test configuration disable all options "By Time" and "By Value", define interval = 10 sec and start test.

New Test	×
Input Test Name	
New Test	
OK Cancel	

Values will be real time displayed on screen for all channels as defined in the template.

Actions			Ch.	Func.	Assign.	Label	Status	Val.	Avg.	Min.	Max.	F.Acc.	F.Inst.
ACTORN .			00	0-10 Vdc	Press		ОК	-0,102	-0,0145	-0,164	0,142		-
			01	Tc, T	penetr	drain	ОК	23,82	23,886	23,82	23,95	0,0	0,0
Reset Test			02	Tc, T	penetr		ОК	23,88	23,965	23,88	24,03	0,0	0,0
			03	Tc, T	penetr		ОК	23,89	23,973	23,89	24,04	0,0	0,0
Saturation Status			04	Tc, T	penetr		ОК	23,84	23,921	23,84	23,99	0,0	0,0
			05	Tc, T	penetr		ОК	23,92	23,989	23,92	24,07	0,0	0,0
			06	Tc, T	penetr		ОК	23,92	23,985	23,92	24,05	0,0	0,0
Add Info			07	Tc, T	penetr		ОК	23,91	23,972	23,91	24,04	0,0	0,0
			08	Tc, T	penetr		ОК	23,84	23,894	23,84	23,97	0,0	0,0
Input	۲		09	TC, T	penetr		OK	23,85	23,929	23,85	24,00	0,0	0,0
Input Module			10	Tc, T	penetr		OK	23,93	23,993	23,93	24,08	0,0	0,0
All Assigned			11	Tc, T	distrib		ОК	23,87	23,942	23,87	24,00		-
			12	Tc, T	distrib		ОК	23,85	23,912	23,85	23,98	-	-
View	۲	§ 💌	13	Tc, T	distrib		ОК	23,92	23,982	23,92	24,05	-	-
Grid		§ 💌	14	Tc, T	distrib		OK	23,84	23,905	23,84	23,99		-
Benot		i 🔳	15	Tc, T	distrib		OK	23,93	23,984	23,93	24,04		-
Trend		1	16	Tc, T	distrib		OK	23,87	23,953	23,87	24,04		-
Cashidan			17	Tc, T	distrib		ОК	23,83	23,900	23,83	23,96	-	-
Statistics			18	Tc, T	distrib		OK	23,92	23,993	23,92	24,07	-	-
Saturation			19	Tc, T	distrib		OK	23,73	23,802	23,73	23,88		-
Template Report			20	Tc, T	distrib		OK	23,85	23,911	23,85	23,98		-
			Maxval				OK	23,93	24,000	23,93	24,08		-
			MinVal				OK	23,73	23,802	23,73	23,88		-
			Delta				OK	0,20	0,198	0,19	0,23		

Click on "Report" to see intermediary report.

🛿 XValFL 1.0.0.6 - No login - Administrator - Test: "New Test"															
Actions	100%	880													
Start Test	Test (Ter	nplate): New Te	st (Tem	plate for	autoclav	e)									
Reset Test	YANEL 100	0.0 SN: 20074 010	0 70002 1	1692 Lines	und to: Eu	niuntion									
E Contin	Hydra Id: 60	673021 - Module Id	1; Hydra	interval: 0:1	08 (hh:mm:	ss); Scan F	ate: SLOW	ŧ							
Columbian Chabus	F Lontig Mitual chani	steam:∠value=+1i hels:	i,D *C; 16	iemp.= +12	1,0 °C; Mr	i. iemp. io	Calo. F Va	iue= +118,	D-C						
Saturation Status	Maxval = M MoVAL = M	Apx(@1:20)													
Test Config.	Deita = Ma	x(@1:20) · Min(@1:	10)												
Virtual Chan.	Date & Tir	ne Action	#18	#19	#20	Maxval	Minival	Deita	F01	F02	F03	F04	F05	F06	1
Add Info	t/mm/yy hhar	miss) Func.	Te, T	Te, T	Tc, T			-	Tc. T	Tc, T	Tc, T	Te, T	Te, T	Tc, T	
	t As		Value	Value	\@lue	Calo.	Cale.	Cale.	F Value	F \alue					
Inout	bed Callb.		#1	#1	#1				#1	#1	#1	#1	#1	#1	
input	1: Calibration a	sutociave	OF	0K	0K				OF	OK	OF	OK	0K	0K	
A Instit Madula	AL STATUS		1.00535	1.00930	1.00345				1.00842	1.00643	1.00628	1.00896	1.00440	1.00855	
The index module	8.4		-0.53	-0.82	-0.51				-0.77	-0.70	-0.73	-0.87	-0.70	-0.75	
Al Assigned	sign.		distrib	distrib	distrib				penetr	penetr	penetr	penetr	penetr	penetr	
	- Spel								drain						
View															
	06/05 19:50:5	3 ON	23.98	23.79	23.89	23,98	23,79	0,19	0.0	0.0	0.0	0.0	0.0	0.0	
Grid	05/05 10:51:0	1	23.95	23.79	23.89	23,98	23,79	0,19	0.0	0,0	0,0	0,0	0,0	0,0	
9 Report	00005 19:51:1	7	23.00	23.77	23.07	24.00	23,77	0.23	0.0	0.0	0.0	0.0	0,0	0,0	
A mopon	06/05 19:51:2	5	23.97	23.77	23.90	23,98	23,77	0,21	0,0	0,0	0,0	0,0	0,0	0,0	
Trend	06/05 19:51:3	3	24.07	23.88	23.98	24,08	23,88	0,20	0,0	0.0	0,0	0,0	0,0	0,0	
Statistics	05/05 19:51:4	11	23.95	23.77	23.87	23,96	23,77	0,19	0.0	0,0	0,0	0,0	0,0	0,0	
Cabardian	06/05 19:51:4	19	24.05	23.86	23.96	24,05	23,86	0,19	0,0	0,0	0,0	0,0	0,0	0,0	
Saturation	06/05 19:51:5	7	23.94	23.75	23.85	23,94	23,75	0,19	0.0	0,0	0.0	0,0	0,0	0,0	
Template Report	06/05 19:52:0	6 2	24.04	23.85	23.90	24,04	23,80	0,19	0.0	0,0	0,0	0,0	0,0	0,0	
	0505 19:52:3	1	24.01	23.82	23.94	24.01	23.82	0.19	0.0	0.0	0.0	0.0	0.0	0.0	
Filter	\$ 06/05 19:52:2	9	23.92	23.73	23.85	23,93	23,73	0,20	0,0	0,0	0,0	0,0	0,0	0,0	
	06/05 19:52:3	7	24.03	23.83	23.94	24,03	23,83	0,20	0.0	0.0	0,0	0,0	0,0	0,0	
Rebuild Report	05/05 19:52:4	6	23.93	23.74	23.84	23,93	23,74	0,19	0,0	0,0	0,0	0,0	0,0	0,0	
M 100	A 06/05 19:52:5	3	23.95	23.75	23.88	23,95	23,75	0,20	0,0	0,0	0,0	0,0	0,0	0,0	
	06/05 19:53:0	1	23.97	23.77	23.88	23,98	23,77	0,21	0.0	0.0	0.0	0,0	0,0	0,0	
IM IM #01	06/05 19:53:0	7	23.98	23.78	23.89	23,08	23,78	0.20	0.0	0.0	0,0	0,0	0,0	0,0	-
V V #02	19:55:1		20.00	20.00	20.02	2-1,00	20,10	0,21	0,0	0,0	0.0	0,0	0,0	0,0	-
	T														1
1* 1* HU3	Page 2/2				•									D	۰.
2:48												Da Da	ata Collect		
			_	_	_		_	_		_	_				

Click on "Trend" to see real time trending for all channels

🚝 X¥alFL 1.0.0.6 - No login - Ad	lministral	tor - T	est: "I	iew Te	est"																	_ 🗆 ×
Saturation Status	-	≴	01V	02V	03V	041/	05V	DEV	07V	08V	091	101	11V	12V	13V	14V	151	16V	17V	18V	19V	20V
Test Config.																						
Virtual Chan.		90	-												_			_				_
Add Info																	1					
Input	۲	80	-																			
A Input Module																						
All Assigned		70												- /	<u>/</u>						_	
		2																				
View	۵																					
Grid		و ⁶⁰	-										11		-						-	
Report		Val																				
A Trend		50	-										r		_						_	
Statistics																1						
Saturation		÷										/				i						
Template Report		40									11											
											1					i						
Filter	۲	30	-								r				_						_	
▼ #20																						
Maxval 📃			-		-																	
MinVal		20								1						. 1	2					
🗖 Delta		Mon	13 Jun	2005				19:	55					20	00:00						20:05	
		100,01	no bun																			
() 15:02 () 00:01																				Jata Lo	llect	

Select or unselect the channels to be displayed on screen: right click on green zone where the channels are displayed and choose one of the options.



Click on "Statistics" to see intermediate statistics; click on "Reset Test" to calculate statistics from start test to end test.

Reset of Calculated Values during Test Study:

In order to either mark the beginning or the end of some operations or actions, the user may reset the calculated values of the data logger. When resetting these values, the old information will still be available in the test report. The "Reset" message appears on the report and on the trends.

This will also be a mark for the Statistics calculations.

The main purpose of the "Reset" function is to clearly define an interval inside which the users need to make the specifics calculations.

The data logger will automatically calculate:

- Between the Start and the first Reset
- Between two successive Resets
- Between the last Reset and the End

The users have the possibility of making calculations for the chosen period. In this case the user needs to:

- Choose the interval
 - If the calculation is done between two successive Reset :
 - Start interval = first value after the first Reset
 - Stop interval = last value before the second Reset

Example: To delimitate a sterilization interval, reset values as follows:

- Define the beginning of a sterilization interval:
 - When the minimal value of all thermocouples is higher than 121°C or
 - Manual synchronize with the autoclave indication of sterilization interval start
- Define the end of the sterilization interval :
 - When the minimal value of all thermocouples is lower than 121°C or
 - Manual synchronize with the autoclave indication of sterilization interval stop

Push on the "Reset" button at the beginning and at the end of the sterilization interval.

A message will appear reminding the user that the test is about to be reset and will ask for confirmation. Click on "Yes" to proceed or on "No" to cancel.

All the values will be reset, and then the system will restart the calculations from the reset moment chosen by the user.

	XValFL 1.0.0.6 - No login - Admi	nistrator	- Test: "New Test"												_10	×
ľ	Actions	۱ (🕇 100% 🔒 🍯 🗅													
	Reset Test															
			Statistics Panor													
	Saturation Status		Test (Templete) Her	r Tant (. fac. and .	(auna)									
			resc (remplace), ner	w lest (rempace	autor auto	(lave)									
			XMFL 1.0.0.8 - SN: 2687-	401038-79	000-10582 hvdra latera	Licensed	to: Evaluat	ion Com Pater	SLOW							
	Add Info		Date & Time	Action	#01	#02	#00	104	A05	#06	807	808	#09	#10	#11	
H			(dd/mm/yy hh:mm:ss)	Funo.	To, T	Το, Τ	To, T	To, T	To, T	To, T	T0, T	To, T	To, T	T0, T	To. T	
	Input	۵.	Set As Used Calib.: Calibration as	stoclarve	F \@lue	F Value	F Value	F \due	Fildlue	F Value	F \QUe	F \alue	F Value	F Value	Value	
	2. Jonet Module		Calib. Status		0K	0K	0K	0K	0K	0K	0K	0K	0K	0K	0K	
	All Arrighted		M458I P.1AI		1.00842	1.00843	1.00628	1.00996	1.00440	1.00655	1.00650	1.00493	1.00628	1.00432	1.00308	
L	a nung to		Assign.		panetr	penetr	penetr	panetr	penetr	penetr	penetr	penetr	penetr	penetr	distrib	
	View	۲	Label		drain											
	Grid	, and a second sec														
	Report															
	Trend															
	& Statistics															
	Saturation															
	Template Report															
ľ	Filter	*														
Ŀ	Rebuild Report															
l	#00															
II.	₩ #01															-
I	₩ #02															*
	₩ #03		um 1/2													<u> </u>
C	9:10 🖓 00:03	P	ige i //2			-								ata Collec	2	· ·



Extaire 1.0.0.6 - No login - Aumin	strator - rest	: new rest												- 15	1 -
Actions	101	×													
															•
Reset Test															_
	s	tatistics Repo	nt												
Saturation Status		et (Template): Ne	w Test (Template	for auto	(avel)									
						,									
	X	SFL 1.0.0.8 - SN: 2887	401038-79	000-10582	Licensed t	o: Evaluati	en Dete	C1 (14)							
Add Info		tual channels: facval = Max(@1:20) fin'del = Min(@10:20)	une no. 1, P	ijua iite i	a. 0.00 (m	unn 36), i	Kall Falle.								
Input)	Date & Time	Action	#01	A02	#00	#04	A05	A06	807	#00	409	#10	#11	
2 Investigation	(8	śmmłyy Nommiss)	Funo.	To. T	To. T	To, T	To, T	To. T	To, T	To, T	To, T	To, T	To, T	To. T	
C III COM	54	t As		F \blue	F \dilue	F Value	F \@lue	F \dilue	F Value	F \blue	F \@lue	F Value	F \blue	\blue	
All Assigned	0	red Calib.: Calibration as	itoclave	04	04	OF	0K	04	OF	OF	04	OF	OF	04	
		V91		1.00342	1,00543	1.00628	1.00996	1.00440	1.00655	1.00050	1.00493	1.00626	1.00432	1.00306	
View	P.	Val		-0.77	-0.70	-0.73	-0.87	-0.70	-0.75	-0.76	-0.77	-0.75	-0.58	-0.44	
Brid	A	sign.		panetr	penetr	penetr	penetr	penetr	penetr	penetr	penetr	penetr	penetr	distrib	
Report	8 6	bel		drain											
riepon	8 9	at: 12/06/05 19:50:53	ON												
Irend	8 0	d: 13/08/05 20:01:23	B												
A Statistics	F 1	Config Steam, Z \de	e= +10,0 *	C: To Temp	= +121,0 *	C; Mn. Ter	np. To Calo	. F Maker	+118,0 °C						
Saturation	16	n		23,80	23,88	23,89	23,84	23,92	23,92	23,91	23,84	23,85	23,92	23,87	
Template Report		ix		84,47	83,13	83,07	83,83	84,77	83,38	83,44	84,07	84,74	83,23	80,05	
Template Hopen		ange un		40.652	39,780	39,761	40 174	40,819	39.952	39,93	40.320	40.748	39,853	41 317	
Filter		Aco.		0,0	0,0	0.0	0,0	0,0	0.0	0.0	0,0	0.0	0.0		
Rebuild Report															
# #00	•														
W HOS															-
177															-
₩ #02															Ŧ
₩ #03	Page 1/2	2			•										F
) 10:43 (2) 00:04												D	ata Collec	1	-

Click on "Saturation" to see saturation report

鱰 XValFL 1.0.0.6 - No logi	n - Administrat	tor - Test: "New Test"							-OX
Actions	*	+ 100%							
Start Tart		13/06/05 20:01:01		80.82	-0.168	0,43971	0,53971	Overheating	•
Stat Fox		13/05/05 20:01:09		82.21	-0.055	0,40799	0,56799	Overheating	
Reset Test		13/06/05 20:01:17	P	83.50	0.141	0.51742	0.61742	Overheating	
F Config		13/06/05 20:01:31	R.	85.53	0.028	0.54011	0.64011	Overheating	
Calmarking Chalman		13/06/05 20:01:39		86.48	0.164	0.56355	0.66355	Overheating	
Saturation Status		13/06/05 20:01:47		87.12	0.153	0,57798	0,67798	Overheating	
Test Config.		13/06/05 20:01:55		87.69	0.117	0,5927	0,6927	Overheating	
Virtual Chara		13/06/05 20:02:03	OFF	88.18	P_OL	-	-	ERROR	
Witter Chart		8							
Add Info									
Input	۲								
A Input Module									
All Assisted									
Mi Assigned									
VIEW	۲								
Gind									-1
Report									귀
Trend									
Heild									
Statistics	T	Page 2/2							•
(2) 11:43	1 Scan(s)							Data Collect	

Click on "Template Report" to see template report

鱰 XValFL 1.0.0.6 - No login	XYalFL 1.0.0.6 - No login - Administrator - Test: "New Test"													
Actions	۲	+ 100%	16 D											
Start Test												•		
F Config		Templa	te						{C Printed: 134	850E513-258A	-4606-83.AC- 14, from: C:1	70 XV		
Saturation Status		Tomplate	. Tomplato for au	laalawa										
Test Config.		YO ALEL 1.0.1	. remplate for au	10012 10552 Lines	and to: Evaluatio									
Virtual Chan.		Hydra Id: 6 F Config.	9573021 - Module Id: 1; Steam: Z \talue= +10,0	Hydra Interval: 0.0 °C; To Temp.= +12	8 (hh:mm:ss); So 1,0 °C; Min. Tem;	an Rate: SLOW . To Calo, F Va	r lue= +118,0 °C							
Add Info		Calib:	ration: remp. unan.: un	; Press. Chan.: b0;	Pressure Unit: b	ar; Iolerance: U,	00							
Input	۲	at 90 - Ten at 130 - Te	np. = 90,0°C; Error Allo mp. = 131,0°C; Error A	ued = 1,0 (+/-°C); C llowed = 1,0 (+/-°C);	heck Time = 1.00 Check Time = 1	(mm:ss) DD (mm:ss)								
A Input Module		Verify: at 121 - Temp. = 121,0*C; Error Aloxed = 0.2 (+**C); Check Time = 1.00 (mm:ss) RTD:												
All Assigned		Drift Aloo	ed = 0,10 (+/-*C); Dev.	From Heter, Allowe	a = 2,0 (+++C); (neok lime For	Unit = 1.00 (mm.3	(3)						
View		Virtual chan Maxval = 1 Min\dil = M	nels: Aax(@1:20) In(@10:20)											
		Delta = Ma	x(@1:20) - Min(@1:20)											
Grid		Input Mo	lule											
Report		Uhan.	Punc.	Set As	Assign.	Label	Cal. Allowed	input	Uutput	M Val	8 /31			
Transf		#00	0-10 VBo	Value	Press		No	D-1D	0-5	0.50000	0.00			
Trenu		#01	To, T	FValue	penetr	drain	Yes			1.00000	-0.01			
Statistics		#02	To, T	FValue	penetr		Yes			1.00000	-0.01			
Saturation		#03	To, T	Fvalue	penetr		Yes			1.00000	-0.01	-1		
者 Template Report		#04	То, Т	Fidue	penetr		Yes			1.00000	-0.01	-		
		#05	To. T	FValue	penetr		Yes			1.00000	-0.01	<u> </u>		
		Page 1/1		•								•		
[] 12:44 [] 00:03 []										Data Cole	sct			

Stop the test - click on right upper corner

🧱 X¥alFL 1.0.0.6 - No login - Admi	inistrator - Test: "New Test"	
F Config. Saturation Status		Fermer

Choose the first option to terminate test - "Terminate and stop Hydra". The logger and the software will stop collecting data and the report will appear in the test list.



There are three ways of stopping the test.

Stop the software and the data logger acquisition simultaneously

Click on "Cancel" and choose the "Terminate and Stop Hydra" option



<u>Stop the software and do not stop data logger acquisition – user may change data acquisition</u> <u>interval</u>

Click on "Cancel" and choose the "Terminate and Continue Hydra Scan without PC..." option

鱰 Test Termination
Hydra interval (hh:mm:ss) 0:10 🗘 Save to MC Test Time Capacity of MC: 05:00 (hh:mm)

The user can modify the interval of data acquisition by using the up and down arrows. An indication of the available time for saving data onto the PCMCIA card will be provided to the user.

<u>Stop the software and do not stop data logger acquisition – user cannot change data acquisition</u> <u>interval</u>

Click on "Cancel" and choose the "Terminate and do NOT change current status of Hydra" option. By choosing this option, the user has the possibility to start a new test with the same settings already loaded in the data logger.

鱰 Test Termination	
 Terminate and Stop Hydra Terminate and Continue Hydra Scan without PC Terminate and do NOT change current status of Hydra 	<u>O</u> k Cancel
Lock Front Panel After Termination	

Test Report

Double click to open the report.

Add information about the equipment which is validated using XpertLog: click on "Add Info" and double click on the equipment choosed form the list. Information corresponding to this equipment will be add in the header of the report.

Ecomment Description Øregen (2000) Name ✓ Autoclave FED-005	Cancel	Test Data Report Dest (Template): New Test (Template for autoclave) Matrix 10.0.6 · SN: 2667401036-70003-10662 · Licensed to: Evaluation Equip. Info: Autoclave FED-005; Serial Number: 12345-67890; Location: Production Injectables gutoclave Hydra Life [3] 20201 · Module Id: 1; Hydra Interval: 0:08 (hh:mm:ss); Scan Rete: SLOW F Config Skam: Z: Values + H0.0 *C; To Temp.* + 121,0 *C; Mn. Temp. To Calc. F Values + 118,0 *C Maxval = Max(@1:20) Mn/val = Mn(@1:20) Detta = Max(@1:20) · Mn(@1:20)

Create trend report:

Click on "Trend" then "New Trend Report Page" to create new pages in the trend report. Enter the name for this first page and Ok.

🚝 Comment	
Description	
ali dətə	OK Cancel

🚰 Comment	
Description	
zoom temperature	OK OK
	Cancel

Enlarge the dwell of the report then click on "New Trend Report Page" to create a new page in the trend report Then click on Trend Report - the trend report will have two pages containing information defined previously. Follow the same procedure to add extra pages in the trend report.

耀 XValFL 1.0.0.6 - No login - Administrate	or - Test Report	× 0 -
Actions 🛞	+ 50%	
Save Report As	The Algorit measurements of the Algorithm and th	This Bayet And
View ② Report Trend Statistics		
	Page 1/2	r B F T

Insert image in the test report

Click on Test image then on the image icon

🕎 XV	鱰 X¥alFL 1.0.0.6 - No login - Administrator - Test Report		
-	Actions	۲	F
	Save Report As		4

Define the location where the image is stored to insert it in the report; Click on "Image Report" - the image report was created automatically by the software.





Save report in order to sign the test report

New Report	×	Report Saved
Input Report Name Autoclave Validation Report		Report: "Autoclave Validation Report" saved
OK Cancel		<u>(СК)</u>

The report will be saved as a sub-report of the main report.

	Name	∠ Compiled	Instrument	Scans	GUID
₽	Test 2	13/06/05 20:21:27	63573021	22	{0B495997-D5I
2	New Test	13/06/05 19:50:50	63573021	155	{75B6942A-A3I
•	Name	Created	Reviewed		Þ
F	Autoclave Validation Report 1	3/06/05 20:52:56			

Data Logger used as stand alone unit – data acquisition without computer

Data is stored on two media during data acquisition:

- PCMCIA card
- PC file

In order to use the data logger as a stand-alone system:

- Configure and start a new test study from the computer
 - Once data starts being stored on the computer, click on "Cancel" and then choose the test termination with option 1 or 2

The software will stop, but the data logger will continue storing data. The data will be saved on the PCMCIA card.



(Option 1)

鱰 Test Termination	_ 🗆 🗵
 Terminate and Stop Hydra Terminate and Continue Hydra Scan without PC Terminate and do NOT change current status of Hydra Lock Front Panel After Termination 	<u>D</u> k Cancel



_

In order to stop data logger's acquisition there are two options:

- Connect the computer and start a post test calibration
- Push on "SCAN" button of the data logger.

Read data from the PCMCIA card

Data stored on the PCMCIA card is available for the user:

- By reading data from the card inserted in the data logger
- By reading data from the card inserted in the computer

In "Test" click on Import from PC/Hydra" to recover data from the PCMCIA card of the logger

ß	XValFL 1.0.0.6 - No lo	gin - Administrat	🧱 Equipment Verification	
	Actions	۲	Instrument	
	Open		FLUKE 2635A 6357302 M6.9 A5.02 D1.0 L0.8 - 1/38400 - 63573021 - Unit: *C 26XX/PC - Instrument Time: 20:59:46 / 13-juin-05	
	New		Memory Card is OK - Size 256 K - Free 217 K - Num. Of Files 4	Cancel
	Combine Test			
	Listing			Format MC
	Import from PC/Hydra	<u>a</u>		

The reports available on the PCMCIA card will be displayed - choose the file to be imported and click Ok.



Name	Size	DateTime	
🕅 DATOO.HYD	8274	12/06/2005 16:26	
😚 DAT 01. HYD	15706	13/06/2005 19:50	
😚 DAT02.HYD	2938	13/06/2005 20:21	Delete
DAT03.HYD	2266	13/06/2005 20:56	

Click Import and name test report

k	Import			<u>_ ×</u>	
	from Hydra from File				
	Name	Size	DateTime	Cancel	
	🔞 DATOO.HYD	8274	12/06/2005 16:26		
	🔞 DAT01.HYD	15706	13/06/2005 19:50		
	🔞 DAT02.HYD	2938	13/06/2005 20:21	Delete	
	() DAT03.HYD Wait	Loading	Loading file: DAT03.HYD		
	Save to				

The file will be imported in the test list

XValFL 1.0.0.6 - No	login - Administrat	or - Tests				_ 🗆 ×
Actions	۲	Name	△ Compiled	Instrument	Scans	GUID
Actions		🞇 Test imported	13/06/05 21:06:16	*imported*	16	(B0D362B5-1-
Open		2005 an, 13 New test 1	13/06/05 20:56:20	63573021	15	{DD396F80-A
Test	Data Repo	ort				
Test (T	emplate): Te	st imported				
XVaIFL 1.	0.0.6 - SN: 2667	4-01036-79003-10562 - Licensed to	: Evaluation			
Imported	from Hydra ID:	63573021 (13706705 21:06:16)				

Click on the "From File" tab to get the data from a file in the server (if the data from the PCMCIA card has been stored in the company's server) or from a location in the computer where data has been previously stored or click on the "From Hydra" tab in order to get data from the card inserted in the data logger.

Read data from the PCMCIA card in the computer

OS Windows 98

In order to read PCMCIA card data directly from a portable computer (OS Windows 98) you need to insert two control lines in the "config.sys" file as follows:

"device=c:\windows\system\csmapper.sys" "device=c:\windows\system\carddrv.exe /slot=n" where n = number of PCMCIA slots

4 XpertVal Technical Specifications

4.1 XpertVal - Thermal Validation System Uncertainty

XpertVal Validation system uncertainty - under worst case, after thermocouple calibration:

Data logger Hydra:

	<u>@121°C</u>	<u>C@250°C</u>			
Conformity error:		0.02 °C		0.04 °C	
A/D Conversion error		0.02 °C		0.02 °C	
Compensation error	0.1 °C	0.1	°C		
Total logger uncertainty:	0.14 °C	0.1	6°C		-
Calibration equipment:					
Hart Reference probe		0.021°C		0.04°C	
Smart Display	0.01 °C	0.0	2°C		
Temperature Block 155/320	0.02°C	0.0	2°C		
Total calibration Equipment uncertainty:	0.051°C	C 0.0	8°C		-
Total XpertVal validation system uncertain	ity:				
A°- (sum of data logger and calibration equipment)		0.191 °C		0.24°C	
B° - (cf guide AFNOR XP X 07-020 – square root of the sum of squares of each uncertainty)		0.143°C		0.167°C	
Total system uncertainty maximum is:		0.191°C @) 121	°C & 0	0.24°C @ 250
Total system uncertainty typical is:		0.1°C @ 1	21°	& 0.1°	°C @ 250°C

4.2 Data Logger Hydra

Analog channels: 20 by module

Thermocouples:	J, K, N, E, T, R, S, B, and C
	Measures in °C or °F

Functions

- Validation mode (with XpertVal software)
- Independent (data logger)

Impedance channel: input minimum 100 M Ω in parallel with a capacity of maximum 150 pF.

NMRR:	- 47 dB minimum @ 50 Hz - 53 dB minimum @ 60 Hz
CMRR:	- 120 dB minimum @ 50 or 60 Hz, 1 k Ω lack - 120 dB for continuously voltage, 1 k Ω lack
Maximum input voltages:	- 150 Vcc or Vca eff.

Thermocouple open detection: the injection of a small alternative signal and the utilization of a detection techniques before each measure, permit to detect a thermocouple open if the resistance is between 1 et 4 k Ω .

Power supply:	90 à 264 Vca 50 or 60 Hz
	- Battery of 9 to 16 Vcc (automatically commutation between the source and the battery,
	without electric alimentation interruption)
Dimensions:	$9,3 \times 21,6 \times 31,2 \text{ cm} (h \times 1 \times p)$
Weight:	3 Kg

4.3 Temperature standard

Temperature display:

Technical specifications:

- Resistance :	100 ohm nominal ± 0.1 ohm à 0°C				
- Temperature range :	-200 à 500 °C				
- Material:	inconel				
- Hysteresis	< 0.01 °C à 0°C with extremely points -183 et 420 °C				
- Accuracy:	$- \pm 0.018 \text{ °C}$ @ -196 °C				
·	$- \pm 0.018 \text{ °C} (\widetilde{a}) 0^{\circ} \text{C}$				
	$- \pm 0.019^{\circ} C (a) 200^{\circ} C$				
	$\pm 0,023^{\circ}C @ 420^{\circ}C$				
- Dimensions:	Type 5612: 0,187 " dia. x 9 " (0,475 x 22,86 cm)				
	Type 5613: 0,187 " dia. x 6 " (0,475 x 15,24 cm)				
	Type 5614: 0,25 " dia x 12 " (0,635 x 30,48 cm)				
- Model:	HART				
Reference probe:					
- Temperature range:	-200 à 650 °C				
- Resistance range:	0 to 400 ohm				
- Probe:	25 or 100 ohm				
- Parameters:	ITTS-90, IPTS-68 or Calendar-Van Dusen				
- Accuracy:	$- \pm 0,006^{\circ}C @ 0^{\circ}C$				
	$- \pm 0,009^{\circ}C @ 100^{\circ}C$				
	$- \pm 0.012^{\circ}C @ 200^{\circ}C$				
	$- \pm 0.018^{\circ}C @ 400^{\circ}C$				
	$- \pm 0.024^{\circ}C @ 600^{\circ}C$				
- Temperature coefficient:	<0,5 ppm/°C,				
- Temperature resolution:	0,001°C				
- Resistance resolution:	0,0001 ohm				
- Calibration:	The coefficients are corrected in the equipment during the annual calibration. The				
	formulas for $ITS - 90$ are stored in the thermometer's firmware.				
	The display shows the real temperature				
- Display:	8 digit, 7 segments LED				
- Dimensions:	14,3 x 18,1 x 6,1 cm				
- Weight:	l Kg				
- Type:	HAKI				

SOFTWARE:

The RTD Thermo software of LIVES International allowes:

- Display up to 9 reference probes in the same time (HART probe or intelligent probe IRTD)
- Trace the report under EXCEL with the continuously record of the 9 probes
- Useful for the probes calibrations in the field

4.4 Temperature block

Type: L	IVES	ATC-15	AT	°C-320	AT	°C-650
Temperature range:		-30 to 155 °C	50	to 320 °C	50	to 650 °C
Diameter of validation inser	rt:	26 mm	26	mm	26	mm
Standard insert depth:		150 mm	160	0 mm	16	0 mm
Accuracy:		±0,19°C	± 0),26°C	±0	,39°C
Stability (with standard inse	ert):	±0,02°C	±C),02°C	±0	,03°C
Homogeneity between inser	t's well:	±0,02°C	±C),01°C	±0	,05°C
<u>Vertical homogeneity on 4</u>	<u>0 mm</u>	±0,05°C	±C),10°C	±0	,40°C
Screen and programming:		LCD	LC	CD	LC	D
Temperature from ambient	to max:	23 min	7 1	min	27	min
From Max to 100 °C:		3 min	22	2 min	43	min
Automatically commutation	test:	Yes – Open,	Cle	osed,	Hys	steresis
Programmable grade:			0,1 à 9,9 °C	/ min		
Auto pas :	Yes – up to 10					
Power supply:	230 or 115 V @ 50 or 60 Hz					
Dimensions:			241 x 325 x	x 139 mm		
Weight:		12,6 Kg	1	0 Kg	12	Kg
Protection class:		IP 10				

Important characteristics:

- Double heating zone for better homogeneity in the wells

- A very good accuracy
- MVI circuits assure the temperature stability independently of the source variations
- Double Peltier effect (LTR 155)
- Double heating zone (LTR 320 et 650)
- LCD display
- Complete keyboard
- A very easy programming
- RS 232 communication protocol for remote control