

Labwise

Operating Manual

Grant Instruments, based near Cambridge, England is a world leader in the manufacture and design of equipment for sample preparation, scientific analysis, data acquisition and data analysis providing solutions to the global scientific and industrial markets.

Standards Compliance and Quality

Grants' brand and reputation are based around quality, reliability and accuracy. We ensure our products stringently meet all necessary international safety standards. We pay particular attention to the safety testing of products and remain at the forefront of the product safety standard for laboratory equipment IEC 61010-1. The company is committed to operating its safety test laboratory in accordance with the requirements of ISO 17025.

Grant operates a Quality Management System that complies with the requirements of BS EN ISO 9001:2008.

Beyond compliance to the standard, Grant is committed to continually improving in everything we do; with particular emphasis on understanding what matters to our customers and suppliers, and designing our systems and work to meet their needs.

If you have any feedback on Grant's products or services we would like to hear from you. Please send all feedback to:

Quality Manager
Grant Instruments (Cambridge) Ltd
Evolution House
Unit 2, Durham Way
Royston Gateway
Royston
SG8 5GX
UK

Tel: +44 (0) 1763 260 811
Fax: +44 (0) 1763 262 410
E-mail: support@grantinstruments.com

Sales
Tel: +44 (0) 1763 264 741
E-mail: salesdesk@grantinstruments.com

www.grantinstruments.com

Grant Software License Agreement

This is a legal Agreement between you, the user, and Grant Instruments (Cambridge) Ltd. By opening the software package(s) you agree to be bound by the terms of this Agreement. If you do not agree to these terms please return all disks, manuals and packaging for a full refund.

Use

The Software is the property of Grant and is protected by copyright. You may use one copy of the software on only one computer at a time. If you have multiple licenses for the software, you may use as many copies at any time as you have licenses. "Use" means loaded in temporary memory or permanent storage on the computer. Installation on a network server solely for distribution to other computers is not "use", if you have a separate license for each computer to which the software is distributed. If users will exceed the number of licenses, you must have a reasonable process to assure that the number of persons using the software concurrently does not exceed the number of licenses.

Intellectual property

All intellectual property rights in the Software and user documentation are owned by Grant or its suppliers and are protected by United Kingdom copyright laws, other applicable copyright laws and international treaty provisions. Grant retains all rights not expressly granted.

Restrictions

Except for a back-up or archival copy of the Software (for your use only), you may not copy the Software. In addition, you may not sell, transfer, loan, rent, lease, modify or alter the Software or any portion thereof, without the written consent of Grant.

Warranty

Grant warrants that the Software will substantially conform to the applicable user documentation. Grant also warrants that the software disks supplied by Grant on which the Software is distributed and the user documentation are free from defects in materials and workmanship. Grant will replace defective software disks or user documentation at no charge, provided you return the item with dated proof of payment to Grant within 90 days of the date of delivery. If Grant is unable to replace defective media or user documentation, Grant will refund the amount you paid for the Software. These are your sole remedies for any breach of warranty.

Except as specifically provided herein, Grant makes no warranty or representation, either express or implied, with respect to the Software or user documentation, including their quality, performance, merchantability or fitness for a particular purpose.

The warranty and remedies set forth herein are exclusive and in lieu of all others, oral or written, express or implied. No Grant dealer, distributor, agent or employee is authorised to make any modification or addition to this warranty, save that nothing in this clause or elsewhere in this Agreement shall in any way detract from any statutory right which you may have.

Limitation of liability

Because software is inherently complex and may not be completely free of errors, you are advised to verify your work and to make back-up copies of it. In no event will Grant be liable for direct, indirect, special, incidental, or consequential damages arising out of the use or inability to use the Software or user documentation, even if advised of the possibility of such damages. In no case shall Grants' liability exceed the amount paid by you for the Software.

Termination

This license will terminate automatically if you fail to comply with the terms of this Agreement, or if you destroy the Software diskettes and the back-up copy.

General

The above terms constitute the entire agreement between you and Grant with regard to the Software. If any provision of this agreement is invalid or unenforceable under applicable law, it is to that extent deemed omitted and the remaining provisions will continue in full force and effect.

This agreement is covered by the law of England and both parties accept the jurisdiction of the courts of England. The export of this product is governed by US and UK export regulations.

Copyright

Labwise is the copyright of Grant Instruments (Cambridge) Limited.

The Labwise software is copyrighted with all rights reserved. Under the copyright laws, neither the documentation nor the software may be copied, photocopied, reproduced, translated, or reproduced on any electronic medium or machine readable form, in whole or part, without the prior written consent of Grant Instruments except in the manner described in the operating instructions. Grant Instruments (Cambridge) Limited shall have no liability for the DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL damage or cost incurred due to the use of the software.

The Labwise manual is copyrighted with all rights reserved. Under copyright laws the documentation may not be copied, photocopied, reproduced, translated, or reproduced on any electronic medium or machine readable form, in whole or part, without the prior written consent of Grant Instruments (Cambridge) Limited.

All trademarks are the property of their respective registered holders.

Note: Due to our policy of continuous improvements of our products, we reserve the right to modify Labwise at any time. If a feature mentioned in this manual is not found in your version, an update may be available, please contact Grant Instruments or your local distributor.

Table of Contents

1.0	Introduction	6
2.0	Installation & connection	6
2.1.	Minimum system requirements	6
2.2.	Unpacking	6
2.3.	Installation	6
2.4.	Connecting to an Optima	7
2.5.	Disconnecting an Optima	7
2.6.	Installing Optima USB drivers (Windows XP)	8
2.7.	Installing Optima USB drivers (Windows Vista/7/8.0/8.1/10)	9
3.0	Main control window	10
3.1.	Overview	10
3.2.	Real time graph	10
3.3.	Optima status information	10
3.4.	Running presets or programs	11
3.5.	Cooling Mode	12
3.6.	Bath setup	12
3.6.1.	On timer completion	12
3.6.2.	Presets	12
3.6.3.	Alarms	12
3.7.	Logging setup	13
3.8.	COM setup	13
4.0	Programs	14
4.1.	Overview	14
4.2.	Program editor window	14
4.3.	Creating a new program	15
4.3.1.	Creating program segments	15
4.3.2.	Setting program alarms	17
4.3.3.	Program completion action	17
4.3.4.	Uploading a program to the Optima	17
4.4.	Edit a program	18
4.4.1.	Edit a program previously saved to disk	18
4.4.2.	Edit a program installed in the Optima	18
4.5.	Deleting a program installed in the Optima	19
5.0	Creating reports	20
5.1.	Creating a report	20
6.0	Calibration (GR150 & GP200 only)	21
6.1.	Performing a single point calibration	21
7.0	Technical Support	22

1.0 Introduction

Labwise is a PC software application that provides configuration and remote control of Optima™ immersion thermostats. This manual outlines the main functions and settings of Labwise version 2 that is suitable for use with GR150, GP200, TX150, TXF200, LT ecocool 150 & 200 models. Grant recommend version 2.1.0 or above for use with LT ecocool models

Labwise offers RS232 connection for the GR150 and GP200 models. The TX150, TXF200, LT ecocool 150 & 200 can be connected either via RS232 or via USB.

Labwise provides the following features:

- Set temperature adjustment
- Pump speed adjustment
- Configuration of alarms
- Configuration of presets
- Configuration of controlled temperature programs
- Data logging
- Reports

Labwise is supplied on a USB flash drive.

2.0 Installation & connection

2.1. System requirements

Operating systems: Microsoft Windows XP, Windows Vista/7/8.0/8.1/10 (32/64bit)

The following list defines the minimum system requirements for the Labwise PC:

- Pentium III/Celeron 866 MHz or equivalent
- RAM 256MB
- Screen with min resolution of 1024 x 768 pixels
- 340 MB free hard disk space
- RS232 serial or USB port

2.2. Unpacking

Standard equipment includes:

- Labwise software on USB flash drive
- RS232 communication lead
- USB communication lead
- Operating manual
- Software installation guide

2.3. Installation

For detailed installation instructions please see the supplied 'Labwise Installation Guide' supplement.

Before starting the installation:

- Ensure the user installing the software has administrator rights to the PC
- Ensure any current Grant applications are closed
- Uninstall earlier versions of Labwise (if installed)

Use the following process for installing the software:

1. Insert the USB flash drive into a USB port on the PC.
The drivers for the USB flash drive should automatically install. Follow any on screen instructions if required.
2. Open the USB flash drive directory and run setup.exe.
The software installer will launch. Follow the installation wizard instructions.

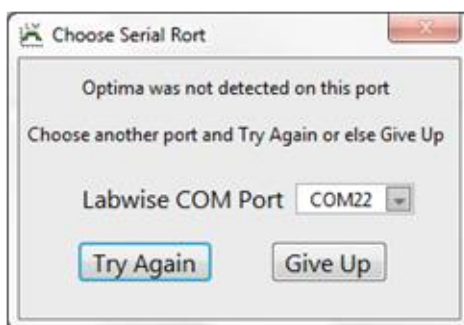


Follow the on screen instruction during th installation process. Labwise will be installed and added to the programs menu and a shortcut will be added to the desktop.

2.4. Connecting to an Optima

The Optima should be connected to the PC either using a RS232 (all models) or a USB (TX150, TXF200, LT ecocool 150 & 200 models only) cable.

1. Connect an Optima immersion thermostat to a free port on the PC.
Drivers will need to be installed the first time an Optima is connected to a PC via USB (see 2.5 below)
2. Launch the Labwise application.
Labwise will check the last used COM port and connect to the Optima if available. If no Optima is automatically detected then the following dialog box is displayed with all available COM ports shown. Choose the correct COM port from the list and click “Try Again” to connect. If you are still unable to connect then it may be that the USB drivers are not correctly installed (see section 2.6 for further details)



When successfully connected, the main control window will be displayed and show the Optima settings including temperature and pump speed in real time. The graph will show the temperature from when the Optima was connected.

2.5. Disconnecting an Optima

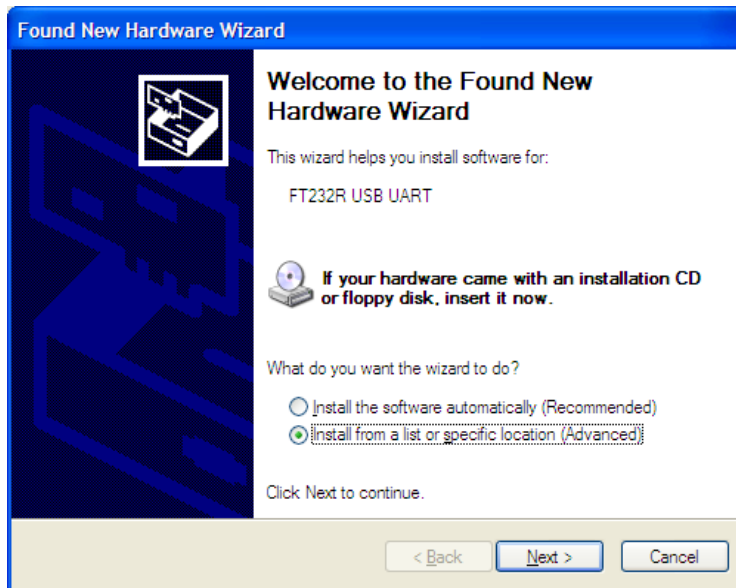
An Optima SHOULD NOT be disconnected when communications are established as damage could occur to PC or the Optima. If you wish to disconnect, first switch off the Optima and then remove the communication cable.

2.6. Installing Optima USB drivers (Windows XP)

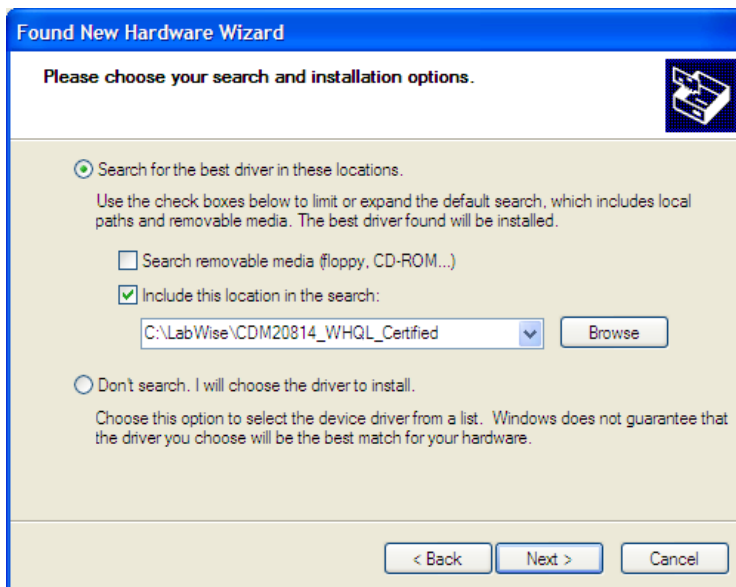
The Labwise installation process must be completed prior to attempting to install the USB drivers.

Drivers should be installed automatically the first time an Optima is connected via USB to a PC. If this does not happen then the drivers can be installed manually using the following method (Windows XP).

1. Connect a TX150 or TXF200 to a free USB port on the PC.
The Found New Hardware wizard should start



2. Select **Install from a list or specific location (Advanced)** and click **Next**.



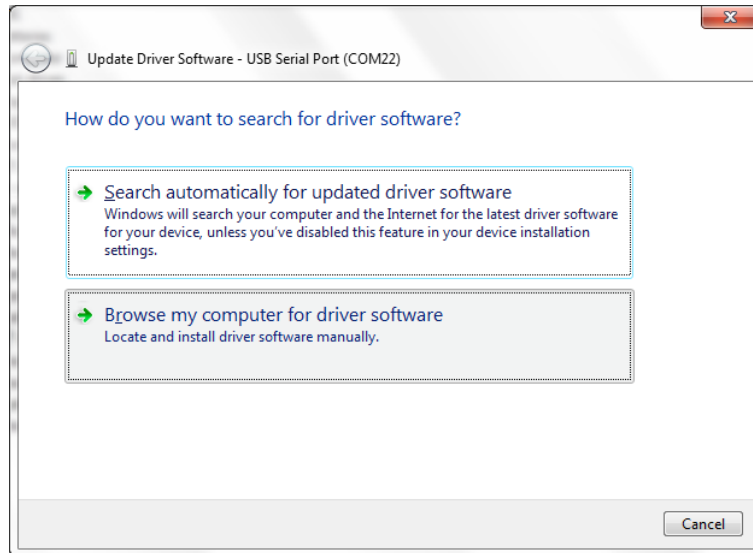
3. Select **Include this location in the search** and browse to "C:\Labwise\CDM20814_WHQL_Certified". Click **Next**.
4. The driver will install. Click **Finish** to complete. The Optima should now be ready to use.

2.7. Installing Optima USB drivers (Windows Vista/7/8.0/8.1/10)

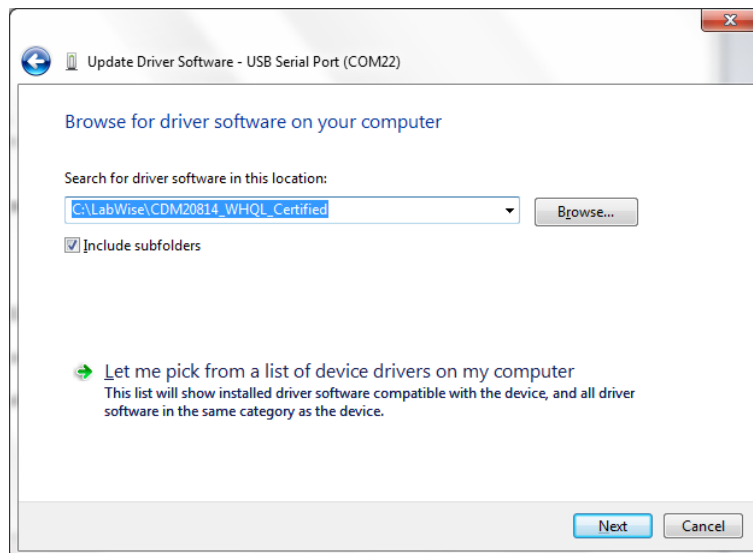
The Labwise installation process must be completed prior to attempting to install the USB drivers.

Drivers should be installed automatically the first time an Optima is connected via USB to a PC. If this does not happen then the drivers can be installed manually using the following method.

1. Connect a TX150 or TXF200 to a free USB port on the PC.
The Found New Hardware wizard should start



2. Select **Browse my computer for driver software**.

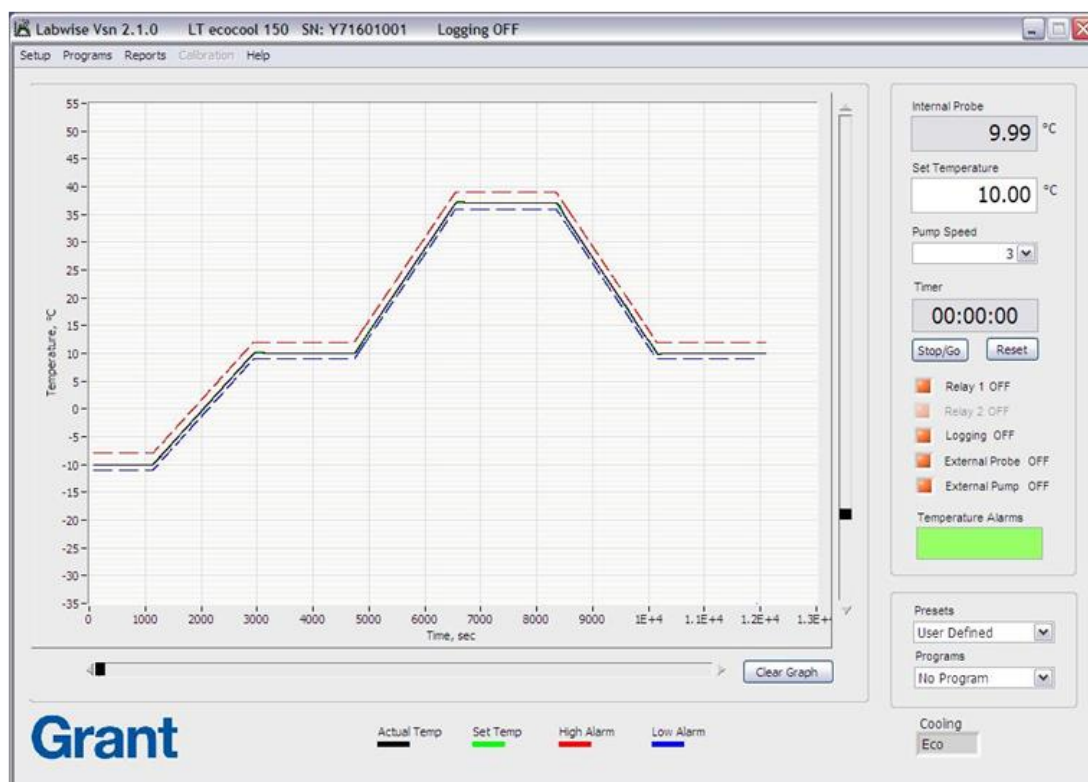


3. Browse to "C:\Labwise\CDM v2.12.12 WHQL Certified". Click **Next**.
4. The driver will install. Click **Finish** to complete. The Optima should now be ready to use.

3.0 Main control window

3.1. Overview

Labwise opens the main control window at start up. This window shows real time information when an Optima is connected.



3.2. Real time graph

The real time graph plots set temperature (green line) and measured temperature (black line). If a high alarm (red line) or a low alarm (blue line) are configured then these will also be displayed as dashed lines. The graph will update continuously.

Horizontal (time axis) and vertical (temperature range) scrollbars are provided next to the real time graph. The scrollbars provide dynamic rescaling of the time and temperature axes to allow zooming in and out to show the data more clearly.

3.3. Optima status information

The numerical values of the set temperature, measured temperature (either by the internal or the external probe) and pump speed are continuously displayed. Set temperature can be changed by updating the value and pressing tab to confirm. The pump speed can be changed using the drop down menu (GP200, TXF200, LT ecocool 150 & 200 only).

In normal operation the timer corresponds to the Optima countdown timer. The control buttons allow the timer to be controlled via Labwise. If a program is running then the timer display changes to show the current segment number and the current segment time remaining.

There are five checkbox indicator/controls:

- Relay 1
- Relay 2 (only enabled for the GP200)
- Logging
- External probe
- External pump (LT ecocool 150 & 200 only)

The relay checkboxes are for indication only and show the state of the relays. The logging and external probe checkboxes are controls and can be used to switch the associate feature on or off. The indicators are red if the feature is switched off and green when switched on.

When the logging checkbox is clicked the indicator changes to green. The default settings open a dialog box and prompt for a log filename. Other log filenames and the default directory can be configured – see section 3.6. After confirming the log filename, a prompt will appear to allow comments to be added to the log file. Logging only starts when both of the log filename and comments have been confirmed. Data is recorded as a tab separated values (.tsv) in the defined log directory. Logging can be stopped at any time by toggling the logging checkbox back to red.

The Optima can allow control via an external temperature probe. These are available from Grant Instruments or your local distributor. The external probe can be activated using the “External Probe” checkbox. If a probe is not present or faulty then an appropriate error message will be displayed. The default operation uses the internal temperature probe.

The External pump checkbox is for indication only and shows the status of the pump

The temperature alarms box indicates when any high or low temperature alarm limit is exceeded. The box should be green in normal operation. If an alarm is detected then the box will turn red and a short alarm message will be shown. See section 3.5.3 for configuring alarms.

3.4. Running presets or programs

Presets and programs can be run using the drop down option boxes on the main control window.

Note that both presets and programs will start as soon as they are selected from the drop down menu.

A preset consists of a set temperature and pump speed (TXF200 only) that can be configured for convenience. Selecting a preset from the drop down menu will cause the set temperature and pump speed to be updated immediately to the preset values.

To move away from a preset temperature and pump speed, select “User defined” from the drop down menu or manually change the set temperature or pump speed.

A list of the programs stored in the connected Optima is shown on the programs drop down menu. Selecting a program from the drop down menu will cause it to start immediately. When a program starts the countdown timer display changes to show the program segment number currently running and the segment time remaining .

On the completion of a program, the Optima will either return to the original temperature, hold at the final temperature or repeat depending on the program definition.

To stop a program and return to the normal operating mode, select “Isothermal” from the drop down menu.

3.5. Cooling Mode

The current cooling mode is displayed as status only (LT ecocool 150&200 only)

3.6. Bath setup

The key settings on the Optima can be changed by selecting **Bath** from the **Setup** option on the main control window menu.

The screenshot shows the 'Labwise Bath Setup' dialog box. It is divided into three main sections: 'On timer completion', 'Presets', and 'Alarms'.
1. **On timer completion:** Includes a time input field set to '00:01' (hh:mm), a 'Heater State' dropdown menu set to 'Off', and a 'Buzzer' checkbox which is currently 'OFF'.
2. **Presets:** Contains three temperature input fields labeled 'P1 Temp', 'P2 Temp', and 'P3 Temp', each set to '0.0 °C'.
3. **Alarms:** This section is further divided into 'Low Alarm' and 'High Alarm' settings. For each, there is a 'Type' dropdown menu set to 'Disabled', a temperature input field set to '0.0 °C', and three checkboxes: 'Buzzer OFF', 'Latch Alarm OFF', and 'Relay 1 OFF' (or 'Relay 2 OFF' for the high alarm). At the bottom of the 'Alarms' section is an 'Alarm Hold Off' input field set to '10 s'.
At the bottom of the dialog are 'Accept' and 'Cancel' buttons.

3.6.1. On timer completion

This section allows the timer period to be set and defines the behaviour when the countdown timer reaches zero. This behaviour is only applicable to the GR150 and GP200 models.

3.6.2. Presets

This section allows the set temperature and pump speed to be configured for the three presets. Pump speed configuration is only available with the TXF200 model.

3.6.3. Alarms

This section allows alarms to be set during normal operation. A high and/or low alarm can be set up. There are three types of alarm:

- Disabled – No alarm
- Fixed – Alarm triggered at a fixed temperature
- Deviation – Alarm triggered when the deviation from the set temperature is exceeded

The alarm temperature defines either a fixed temperature or a deviation temperature depending on the alarm type. The checkboxes define the actions taken if an alarm is triggered. The **Buzzer** and **Relay 1** can be switched on and latched if a persistent alarm is required. **Relay 2** is only available with a GP200. **Alarm Hold Off** specifies the time before

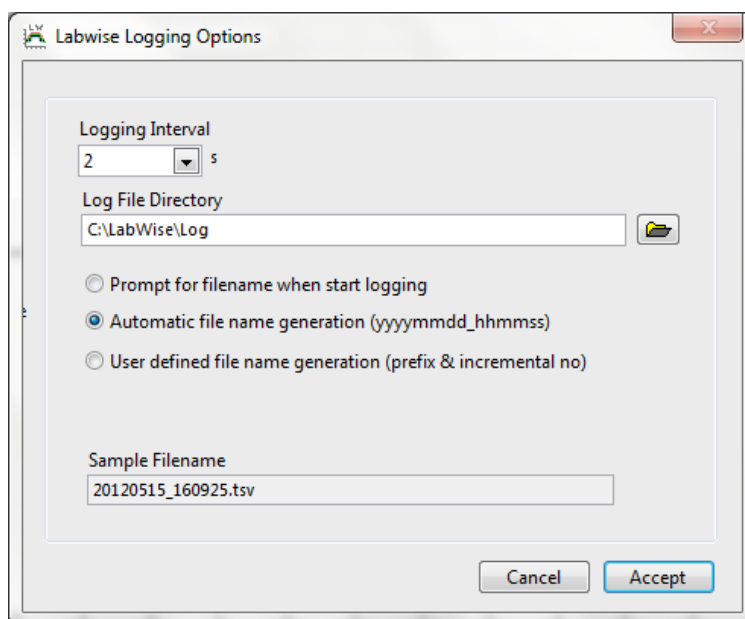
the alarm actions are retriggered once an alarm has been acknowledged. Alarms can be acknowledged by clicking on the temperature alarms box. The TX150/TF200 user manual has further information on the implementation and behaviour of the alarms.

3.7. Logging setup

The data logging settings can be changed by selecting **Logging** from the **Setup** option on the main control window menu. The log file directory and logging interval are user configurable.

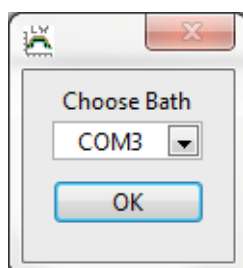
There are three options for the log file name configuration depending on test requirements:

- Prompt the for a filename when the logging is started
- Generate a log file name automatically based on a date and time
- Generate a log file name based on a user defined prefix and an incremental number



3.8. COM setup

The COM port assigned to the Optima can be changed by selecting **COM** from the **Setup** option on the main control window menu.



This option can be used to configure the COM port:

- If an Optima is connected after Labwise is launched
- If the comms cable is moved to a different port
- If moving between different Optima units connected to the PC

It is possible to have multiple Optima units connected to a PC BUT Labwise is only able to monitor one device at a time.

4.0 Programs

4.1. Overview

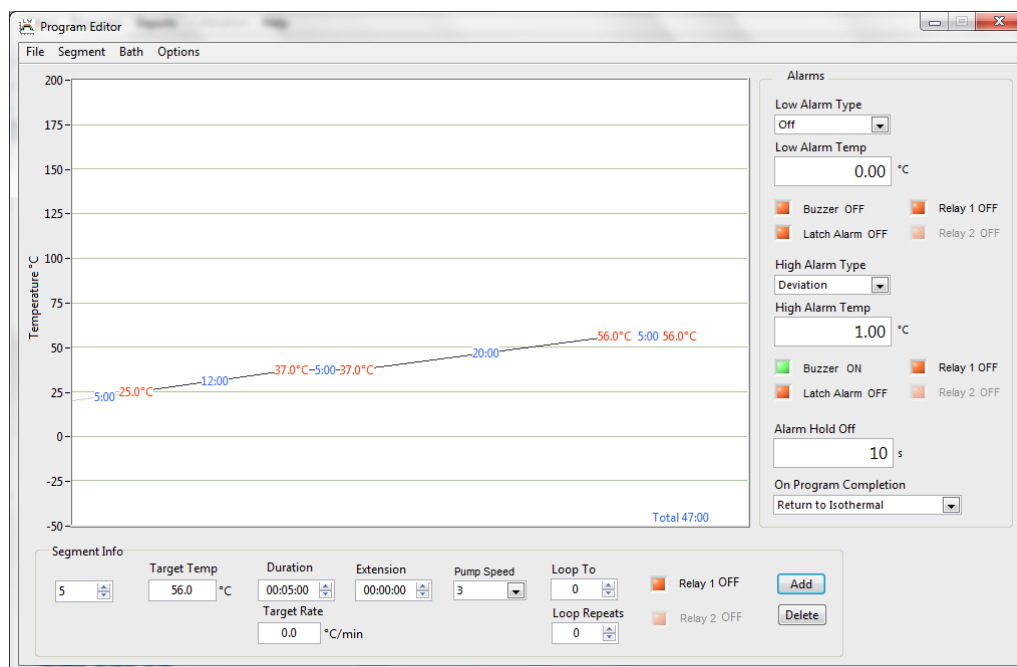
A program allows the temperature and pump speed of the Optima to be controlled with time. A program includes a global set of configurable alarms and a series of segments that are executed in order. An unlimited number of programs can be created and saved on the PC even if an Optima is not connected. However, the number and length of programs that can be stored on the Optima is dependent on the model:

- GR150 – One program with upto 30 segments
- GP200 – Five programs each with upto 30 segments
- TX150 – One program with upto 30 segments
- TXF200 – 10 programs each with upto 100 segments
- LT ecocool 150 – One program with upto 30 segments
- LT ecocool 200 – 10 programs each with upto 100 segments

Segments are defined by a duration and a target temperature. These values can be used to create “ramp”, “dwell” and “step” segments. Cooling “ramps” can be programmed but the Optima must be used with a suitable refrigeration system to ensure the temperature can be followed accurately.

4.2. Program editor window

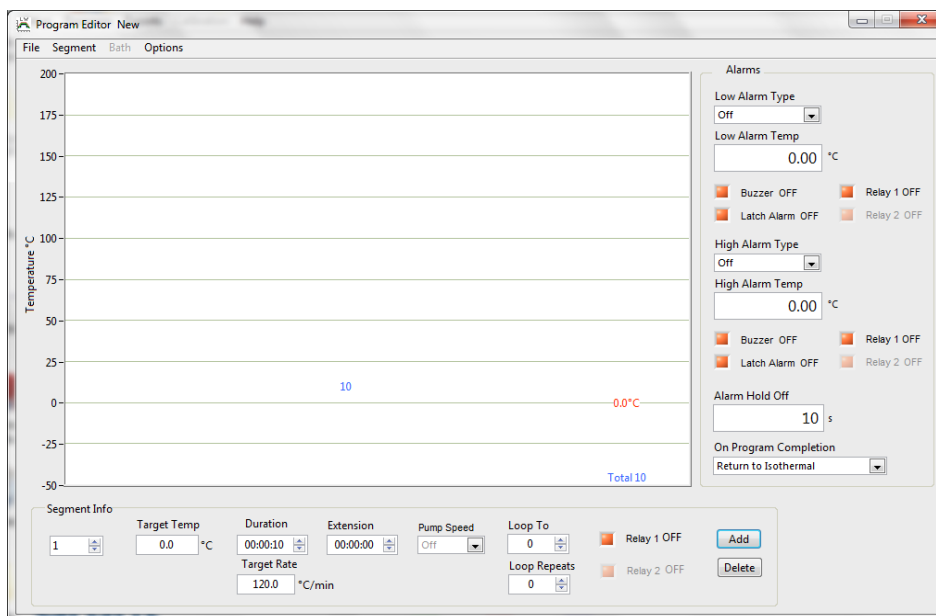
The Program editor window allows programs to be created, saved and edited. It also allows programs to be uploaded to the Optima and downloaded from the Optima. The Program editor can be launched by selecting **Programs** from the main control window menu.



Labwise automatically detects the Optima model if one is connected. If an Optima is not connected then the model you wish to create a program for should be selected.

4.3. Creating a new program

A new program can be created by selecting **New** from the **File** option on the program window menu. A single segment program of duration 10s and set temperature of 0C is created. The program parameters are all set to the default values.



4.3.1. Creating program segments

Programs are constructed from a sequence of segments. Segments can be conveniently added or deleted using the buttons in the segment info box. It is also possible to insert and delete segments using the segment menu option.

The currently selected segment is indicated in the **Segment Info** box. The segment flashes in the graphical display and indicates the **Target Temp** and the **Duration** of the segment.

A segment has the following configurable parameters. Some of the parameters are explained further below:

- Target temperature
- Duration
- Extension
- Pump speed (GP200 & TXF200 only)
- Loop to and repeats
- Relay 1 state
- Relay 2 state (GP200 only)

4.3.1.1. Segment duration

The duration is the time between the start of the segment and the start of the next segment. The duration can be entered in seconds (e.g. 600 =10 mins), or in the form 10:00 minutes or 1:10:00 hours by highlighting the existing entry and overtyping a new value using a colon as separator.

The **Target Temp** and **Duration** may be approximately set by positioning the cursor on the trace over the temperature value for the segment and left-clicking and dragging the segment end point to a new position using the mouse.

4.3.1.2. Extension

The **Extension** is a time period in addition to the **Duration**. A segment with an **Extension** period set will remain active (e.g. heating or cooling) until the target temperature is achieved OR the **Extension** period ends.

This is useful if the controller cannot reach the **Target Temp** within the **Duration** period. The program enters a hold mode until the **Target Temp** is reached when the program will then proceed with the next segment. If the **Target Temp** is still not reached at the end of the **Extension** period then the program will proceed as to the next segment.

It is also useful if the shortest program time to reach the **Target Temp** is required. Set a very short **Duration** period and a long **Extension**. The program will then move to the next segment as soon as the **Target Temp** is reached.

4.3.1.3. Relay operation

If relay operation is required, e.g. for switching a cooler on/off, select **Relay 1** and/or **Relay 2** (GP200 only). The relay output is via the connectors on the back of the control unit. Relay operation may be set individually for each program segment.

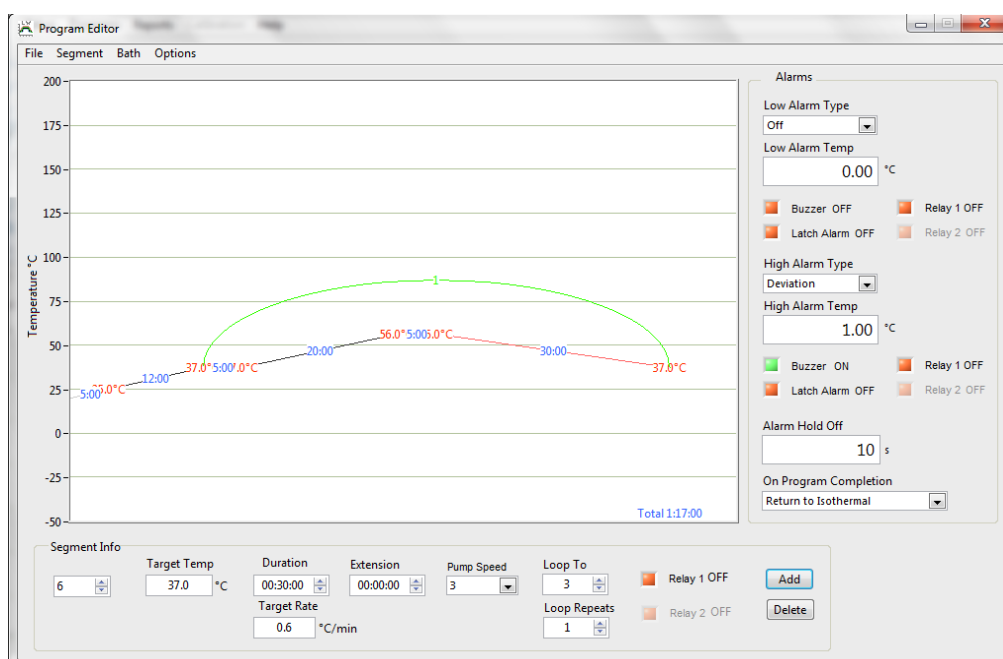
4.3.1.4. Loops

A selected segment or group of segments may be repeated within the program using the **Loop To** function.

To set up a loop, first select the final segment of the loop sequence. The **Loop To** value can then set to be the segment number that forms the first segment of the loop.

Note. **Loop To** value cannot be segment 1. It is also recommended that the program is organised so that the **Target Temp** temperature at the end of the loop is the same as the start of the loop sequence.

The **Loop Repeats** set the number of times the loop should be repeated. A loop is identified on the programming screen as a green arc linking the selected program segments. The number of loop repeats is also indicated on the arc. Nested loops are possible but should be programmed and tested to ensure the temperature changes as expected.



4.3.2. Setting program alarms

Program alarms are used only when a program is running. They are global program parameters and affect all segments. There are three types of alarm:

- Disabled – No alarm
- Fixed – Alarm triggered at a fixed temperature
- Deviation – Alarm triggered when the deviation from the set temperature is exceeded

The alarm temperature defines either a fixed temperature or a deviation temperature depending on the alarm type. The checkboxes define the actions taken if an alarm is triggered. The **Buzzer** and **Relay 1** can be switched on and latched if a persistent alarm is required. **Relay 2** is only available with a GP200. **Alarm Hold Off** specifies the time before the alarm actions are retriggered once an alarm has been acknowledged. Alarms can be acknowledged by clicking on the temperature alarms box. The TX150/TXF200 user manual has further information on the implementation and behaviour of the alarms.

4.3.3. Program completion action

The **On Program Completion** drop down selection box defines the behaviour after a program ends.

Return to Isothermal returns the Optima set point to the value stored before the program was started.

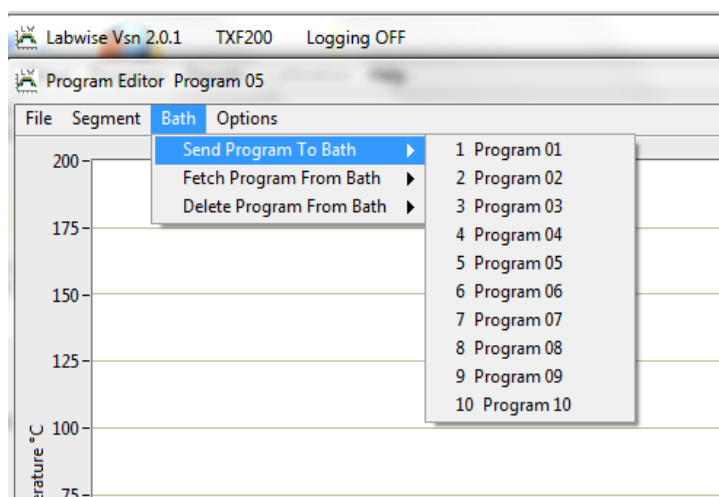
Hold at final temperature keeps the set point at the final segment **Target Temp**.

Repeat program indefinitely will return the program to the start of segment 2 after completing the last segment of the sequence. A green arc is shown on the programming screen. Note that indefinite is actually 255 loops.

4.3.4. Uploading a program to the Optima

When a program has been created on the PC it must be saved and uploaded to the Optima before it can be run. Use the following method to upload the program:

1. Select **File, Save** from the program editor window.
2. Assign a file name to the program in the file save dialog box. The program will be identified in the controller by the first 11 characters of the file name.
3. Select **Bath, Send Program to Bath** and select the program slot that the program is to be stored in the controller. If all slots are full it is necessary to delete a program from the controller before the new program can be uploaded.



4.4. Edit a program

4.4.1. Edit a program previously saved to disk

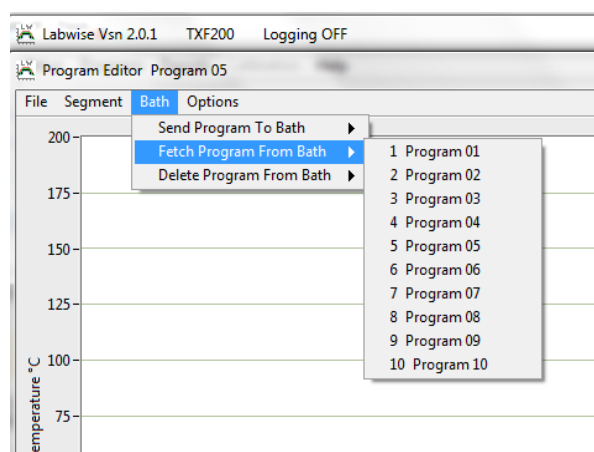
Programs that had been saved to the PC can be opened and edited if required. Select **File, Open** and select a file for editing. Editing a program uses the same procedures as described for creating a new program. Use **File, Save** to save the edited program file specifying a different file name if required.

Note: Editing a program is always done on the PC. If changes are made to a program then they will need to be uploaded back to the Optima to take effect.

4.4.2. Edit a program installed in the Optima

A program that is stored in the Optima can be edited on the PC. Use the following method to download and edit the program:

1. Select **Bath, Fetch Program From Bath** and select the program slot that holds the program you wish to download.

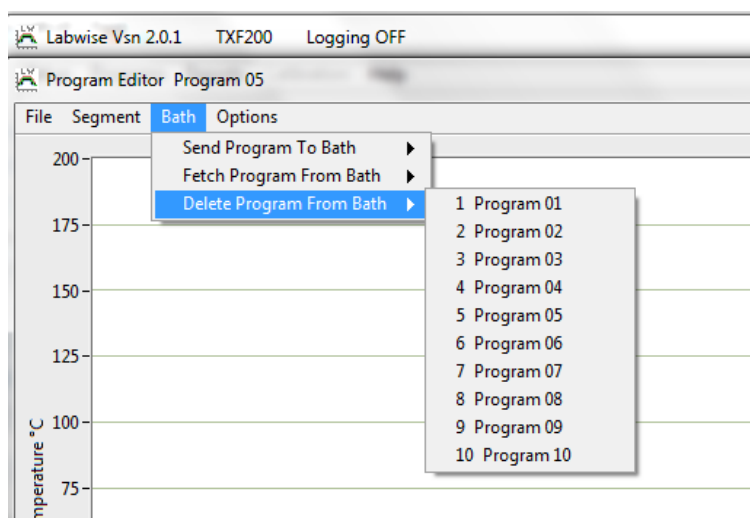


The program will be shown in the program editor window. Editing a program uses the same procedures as described for creating a new program. Use **File, Save** to save the edited program file specifying a different file name if required.

4.5. Deleting a program installed in the Optima

A program that is stored in the Optima can be deleted to free up a slot for a different program.

Note: Deleting a program from the Optima is permanent and cannot be retrieved. If the program may be needed in the future it should be saved to the PC before deletion.

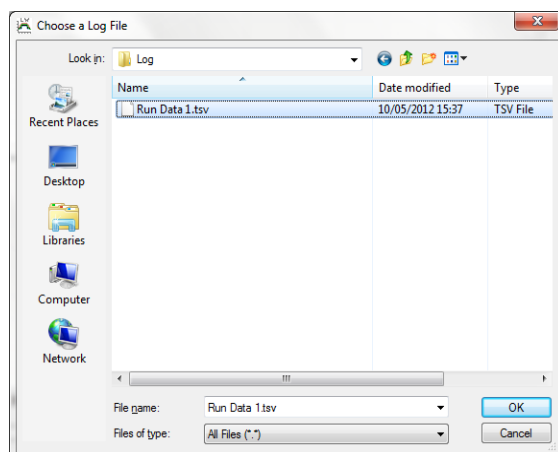


5.0 Creating reports

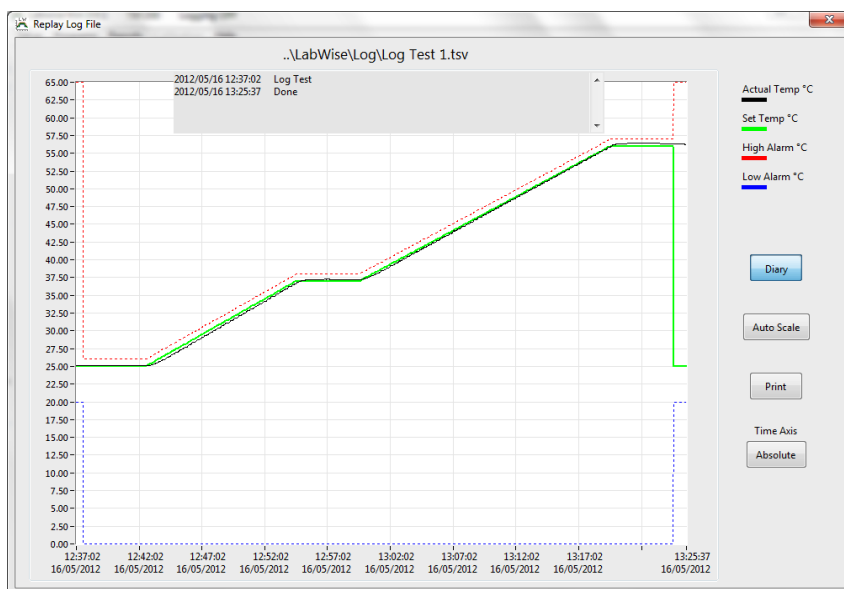
5.1. Creating a report

The **Reports** option allows data logs to be viewed and printed if required. The default directory for log files is C:\Labwise\log.

1. Select **Reports** from the main control window menu
A file browsing dialog box will appear.



2. Browse to the log file and click **Open**
The log file data will be displayed on the graph



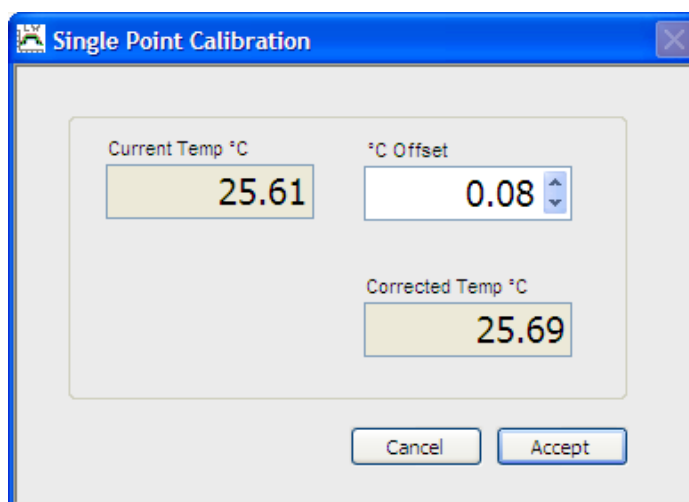
The **Diary** button can be used to show or hide any text comments that were added when the log file was started or stopped. The **Autoscale** and **Time Axis** buttons allow the graph data to be presented in the most convenient form for printing.

6.0 Calibration (GR150 & GP200 only)

6.1. Performing a single point calibration

A single point calibration can be performed using Labwise. This feature is only available with the GR150 and GP200. A temperature offset can be applied such that the temperature displayed by the Optima can be aligned with that taken by an independent temperature probe.

1. Select **Calibration** from the main control window menu
The following dialog box will appear.



2. Adjust the **°C Offset** such that the **Corrected Temp °C** matches the independent temperature probe reading.
*The **Current Temp** is the temperature measured by the Optima. The **Corrected Temp** will be the indicated temperature if the offset is applied.*
3. Click the **Accept** button to apply the offset.

7.0 Technical Support

Service Address: Grant Instruments (Cambridge) Ltd
Evolution House
Unit 2, Durham Way
Royston Gateway
Royston
SG8 5GX
UK

Telephone: (+44) (0) 1763 260811
Fax: (+44) (0) 1763 262410
Email: salesdesk@grantinstruments.com
service@grantinstruments.com
Internet: <http://www.grantinstruments.com>



**Grant Instruments
(Cambridge) Ltd**

Evolution House
Unit 2, Durham Way
Royston Gateway
Royston
SG8 5GX
England

Tel: +44 (0) 1763 260811
Fax: +44 (0) 1763 262410
Email: salesdesk@grantinstruments.com
www.grantinstruments.com

Printed in England – Labwise /30853 /V4 /DMN W86 /Feb 2024