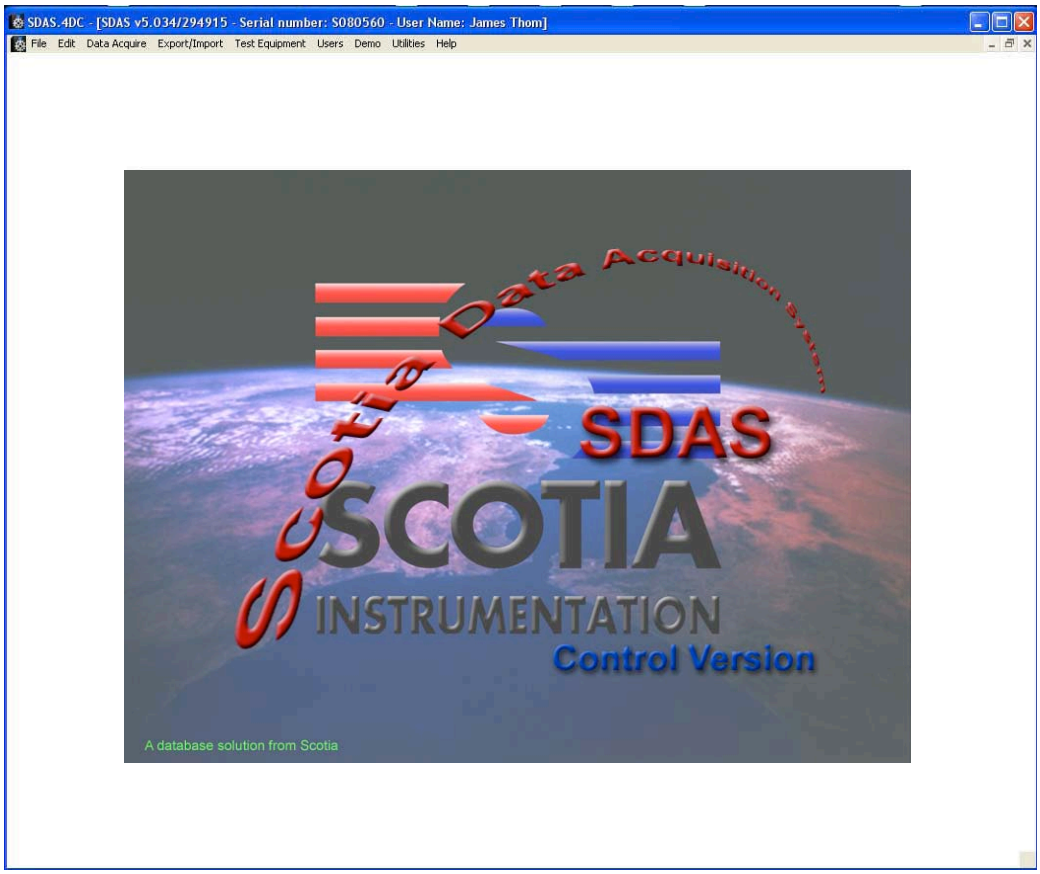

System Operation Manual

v 5.1

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Scotia Data Acquisition System

v5.0

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The SDAS System

Introduction

The Scotia Data Acquisition System (SDAS) is available in several versions which operate with the SDAS family of products. The main device is the SDAS5 which is the 8 channel version of the SDAS devices. The SDAS3 and SDAS4 are 5 channel versions in a different product form. Screens and operation are identical with only active channels being selectable. If fewer channels are used then these disable automatically avoiding any operator confusion with dead channels.

The operating database for the SDAS also operates with the Scotialogger3 and Scotialogger4 which are both loggers with paper and visual indication, a Scotiadatabox which operates in conjunction with a PC or PC laptop gathering the data in real time and the Scotia Underwater Datalogger System (SUDS) which is a remote device which can operate as a standalone device in depths of up to 3000m. All of these devices download their data into the SDAS program running on a PC allowing all the functionality and data analysis of the main SDAS together with the security of the data link ensuring that data cannot be altered by the user in any way.

The current version of the SDAS program is version 5 and all screen captures shown in the these instructions are from SDAS-5 program running on the SDAS5 device. Variations for other members of the SDAS family are shown in the Appendices.

The SDAS5 can have up to eight 4-20mA inputs, two Pt-100 inputs, and up to three counter inputs. Rising or falling alarms can be set for each of the 4-20mA inputs. The SDAS5 can be either a stand alone unit or be part of a network of SDAS units linked by an ethernet or similar networking system to a Server unit which gathers all the data on one database and drive.

The hardware of these units have been extended with additional functions which have been developed to meet the needs of certain customers but these instructions deal with the basic SDAS5 unit. Additional functions of the other hardware units and options available on the SDAS5 are covered in the Options section. The Review version of the SDAS-5 program which is used to view and process data gathered by an SDAS and exported to a PC is also covered in this section.

Function

The SDAS5 will gather data from 4-20mA analogue transmitters, Pt-100 temperature probes, and pulsed counters. The 4-20mA signal can be from a pressure transmitter but this can be any 4-20mA signal giving any value of units. Where ‘pressure measuring’ is used in the following text any measurable quantity could be substituted. The data is digitised and stored within a database together with date, time and data labels making a packet of data which can be retrieved at any future time in part or as a whole test. The data can then be viewed, exported to disk, or displayed graphically on screen or printed either graphically or as numerical data.

While gathering the data from the input devices, the program shows the data on screen both graphically and numerically. The system runs two program loops simultaneously while operating. The main primary loop gathers data from the analogue to digital part of the system and logs these values to disk. The secondary loop takes this data and displays it in real time. The secondary loop can also be used to review gathered data while the primary loop continues to gather new data. This allows the technician or inspector to examine gathered data and even print this data graphically while the primary loop continues to collect data.

Access to data can be restricted by a sophisticated password access system allowing a system administrator to control access down to the level of screen buttons.

Data cannot be altered in the database in any way other than deleting it. This gives a secure record system which gives an absolute assurance that data recalled can have been neither tampered with

Overview

The structure script controls the input to a database using a 4th Dimension database engine. The SDAS can either be a single unit which gathers its data on to its internal drive or it can be part of a networked system which logs all the data to a central server data acquisition unit via a network system. The database filing system makes searching for stored data and recalling it a simple and reliable matter given reasonable care initially with labeling etc. Data is logged to disk within the SDAS unit and any power failure or other acquiring interruption will only affect the data event currently being gathered within the previous minute in the SDAS buffer. Previously gathered data will be safe.

With the server system, data will be logged to disk within the Server unit database and any power failure or other acquiring interruption will only affect the data event currently being gathered or data held in the individual SDAS buffer. Data from any networked SDAS can be seen by it and any other SDAS on the network or a PC on the network running a version of the SDAS-5 program. The data is shown graphically and numerically during the acquiring process and the event window can be re-scaled as you require. Pressure and temperature are logged on separate graphs within the graphing screen using the same time scale. The SDAS receives the 4-20 mA signal and ranges it to match the range of the transmitter. Each transmitter and temperature probe must be registered in the system and, if the transmitter has a serial number chip fitted, it and the range are entered automatically by the system when it is used. The range can be reset by the user by numerical conversion from the transmitters calibrated range.

The time and date of the events are noted at the time of acquiring on the computer used. The graph time scale is shown as events marked by their received time.

Minimum screen depth for use is 1024 x 768 and the screen will dynamically enlarge the graphing areas as the screen size available for use increases.

The program has an on-screen help function. This brings up an info box about controls and data fields as the mouse pointer is moved over them. The box appears after a few seconds and disappears again after a few seconds. The info field appearing does not affect the operation of the buttons or fields.

Starting the SDAS5 unit

The SDAS units are started by switching on the physical power button. The SDAS has a basic interface screen along the bottom of which is a task bar from which you can do various tasks. These include shutting down the SDAS safely, starting the main SDAS application, viewing the SDAS manual, access file functions, access printer operations, access advanced configuration, noting the operating system version, registration status and setting the current time. The following screen appears when the system starts up.

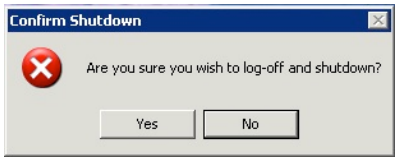
The button bar will disappear when the SDAS program is launched or you place the mouse close on it. Placing the mouse near the bottom of the screen will make it reappear.

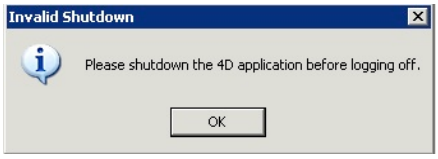
Note that the button bar will disappear when the SDAS program is launched. Placing the mouse near the bottom of the screen will make it reappear.

Shutdown - Closing down the SDAS unit

The shutdown button safely shuts down the SDAS unit. When pressed you will receive a confirmation dialog or if the SDAS application is still running you will be prompted to shut down the SDAS application first. Once you have closed the SDAS application you will need to click the shutdown button again.

normal shutdown confirmation





Incorrect shutdown close the SDAS application from the file menu.

SDAS - Launch the SDAS program

The SDAS button will launch the SDAS application.

The other functions of this screen are covered in Appendix 1 of this manual

Starting the SDAS program

Once launched the group login screen appears. The group user name will be '-User1' or '-User2' and the password is 'U' in both cases. Note that this is in uppercase. Each user can only be a member of one group so choosing the wrong group will result in the users name not appearing on the list for choosing on the next screen. The user chooses his or her name from the pop-up list and enters their personal password. The Scotia Data Acquisition System splash screen then appears.

Closing down the SDAS program and unit

The SDAS-5 program should be exited by choosing quit from the file menu. This closes the system functions saving all buffered data as it does so. Once the SDAS-5 program has quit the operating system should be closed down by choosing Shutdown from the screen tab. Once the operating system has closed down then you should the physically switch off the SDAS unit. Loss of buffered data may result if this sequence is ignored.

Data Integrity

The data being acquired by the program to the data file cannot be altered by the user in any way. Received and logged data is kept exactly as produced from the SDAS at the time the data was gathered.

Acquiring Data

Acquiring is done to the data file at the time interval set. This file is held within the SDAS program's data file and is stored on the SDAS's hard disk and all data received by the SDAS will be buffered and saved to this disk file as it arrives, no matter what the graph indication is being asked to do. If the SDAS fails, for any reason, then all the data up to that point will have been saved to disk automatically other than possibly what is held in the 60 second memory buffer.

When acquisition is stopped, it can be restarted either to the same data file label or as a new data file label. If you restart with the same label then the time axis will not 'look' linear. The events on the graphs will be labelled with the correct receiving time but any period that the acquisition is stopped will not be reflected with a gap in the graphing time line.

Data gathered by an SDAS Server system is logged on the Server only. In the event that the network or Server system goes down then each SDAS unit on the network can have a single user form of the SDAS Program installed and this could be run to gather data locally until the Server system was restored. The network administrator can then collect the locally gathered data back into the main data file via a secure export and import system. Data imported in this way will be labelled accordingly in the main system when it is received.

Note that the SDAS-5 structure is running concurrent routines. This is not true multitasking. The computer running any other part of the program may miss acquiring if another routine is sufficiently 'distracting'. User input will capture a lot of the computer's attention. For example, holding a scroll button continuously or waiting while deciding on print settings if you are viewing data in Review may be enough to cause a data capture to be missed. If this happens the program will always advise you as soon as data has been missed but this may be small consolation when you have to stop logging and restart and miss a logging point. In SDAS Server mode holding open a menu for several seconds may cause the Server link to be dropped. This will involve restarting this SDAS unit.

Each data item received in the Scotia Data Acquisition System has saved with it;

The data label entered at data start containing the Test ID number, Serial number of the SDAS unit, the operating technician's initials and any additional label data.
The User ID label entered
The serial numbers of the transmitters and temperature probes used
The transmitter and temperatures values together with the units of these.
Any offset applied to the transmitter reading at the start of logging.
The program adds the actual computer time and date at which the data was received by the SDAS.
The received events are numbered in the file in the order they are received.
If no temperature probe is being connected to the SDAS then the temperature is noted as -999. This is unlikely to be mistaken for a real temperature.
If zero mA is received on any 'on' channel then this is interpreted as -25% of the scale set as 4mA is considered zero.

Graphed Data

The time axis of the displayed graphs are simply labelled with the arrival time of the data. The time line is not necessarily linear and any delay caused by interruptions or pauses will not appear as gaps in the time line. They will always be labelled correctly though.

A limit of 250 graphed events is set for the gathering data graph. After this the graph scrolls left out of the time scale.

Reviewing Data

The Review mode offers an analysis package for the data currently stored within the SDAS database. The data review can operate either while acquisition is operational or not and on data currently being acquired or on stored data with a different data label.

The graphing process uses a memory array system to store the data for the graphs. If you are operating with large amounts of data then even the fastest computers will give slow performance and older PCs may crash if the processing gets too much for it. In order to restrict the demand for large amounts of operating RAM data events numbering in excess of 10,000 items will either be divided into 10,000 item parts for Review graphing or sampled to reduce the data to within 10,000 items. This process does not change the stored data in any way.

Graphics in this Manual

The screen captures used in the main part of this manual are taken from the SDAS-5 at version 5.03 running on an embedded version of Windows XP. The SDAS-5 program is continually evolving so screen graphics in later versions may vary slightly from this.

The screens shown may have additional parts which appear only when options are added to the basic unit. The options section will illustrate these differences.

The access level system allows user access to various parts of the SDAS routines. If your access is restricted you may be unable to use certain routines. You will be advised of this when you try to access these areas.

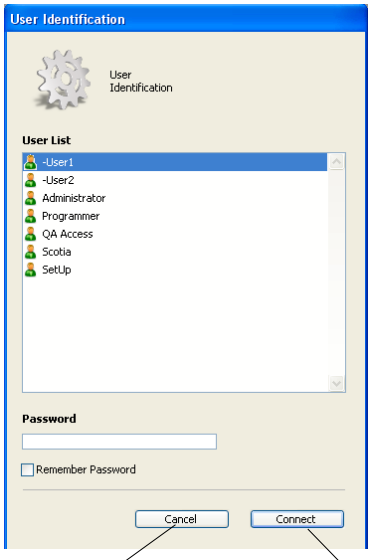
Starting the SDAS

Connect all components to the SDAS prior to switch on. The SDAS system should be started by physically switching on the power to the unit. This starts the AtoD system and the main SDAS-5 operating system. Once loaded the system start screen shows like this.

Launch the SDAS application by clicking this tab

Launch the SDAS-5 system by clicking the SDAS tab. The SDAS-5 program then starts and the Group Access password screen appears.

Group Access Password Screen



Choose the User Group access name and enter the User Group password

The default access code for both groups -User1 and -User2 is 'U' (capital u)

Cancel quits from the SDAS system

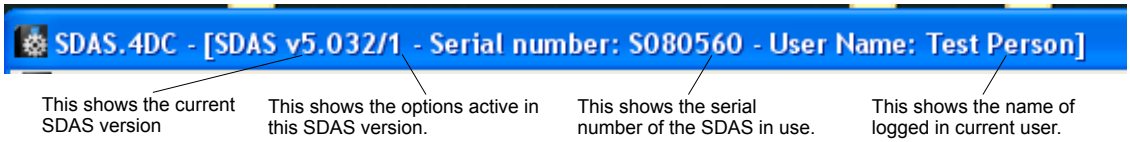
Confirm to proceed to user name and password entry

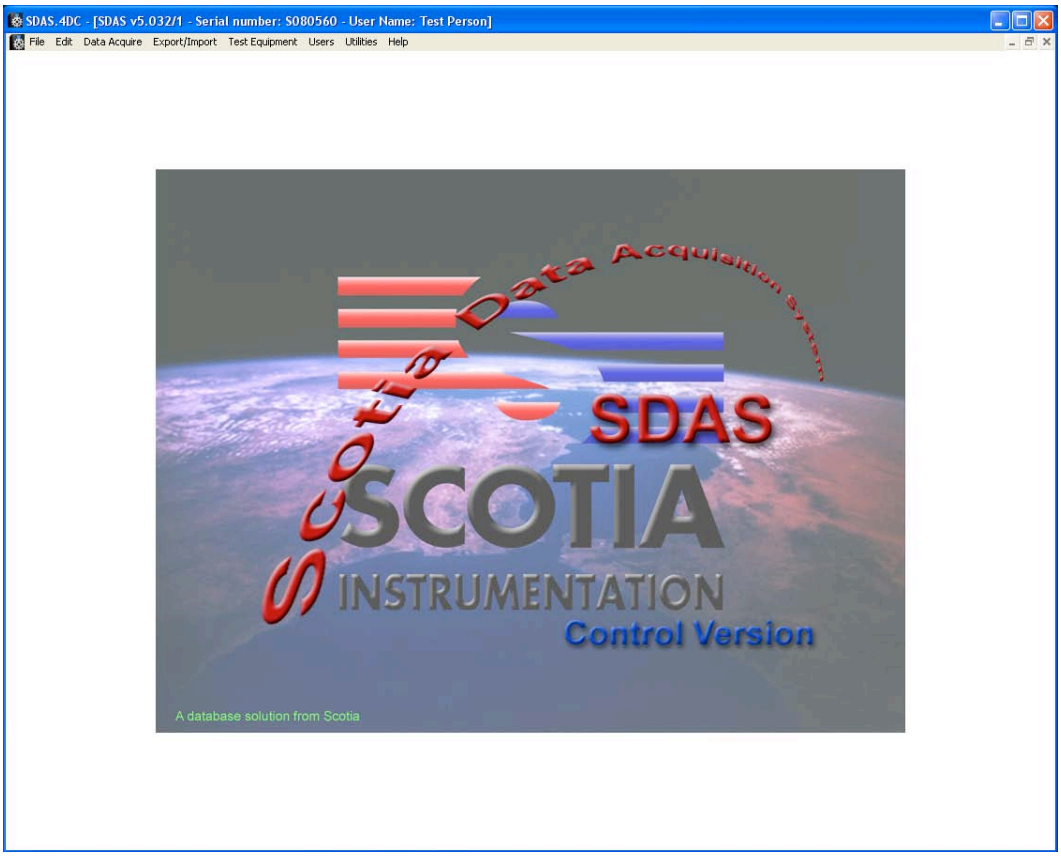
If an incorrect access code is provided then the system will not proceed. Cancel is your only exit.

Successfully entering a Group Access Name and its password then leads to the individual password entry screen. Only users in the Group just entered will be offered as a choice for user name entry.

The user chooses their name from the pop up list and then enters their password. The default user is Test Person with a password 'TP1'. The user proceeds by clicking Confirm. If the user does not see their name or cannot enter a valid password then they only have the option to Quit System. The SDAS splash screen appears after successful logging on and the rest of the system is accessed by the menus which follow.

Once started this banner or similar will appear at the window top





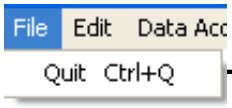
This is the main screen of the SDAS-5 program. All functions are started from the menus at the top of this screen. The menu functions will be covered in the following instructions.

Menu System

The SDAS system is driven from a menu system from the main splash screen. Each menu is shown and explained in order of their appearance on the screen.

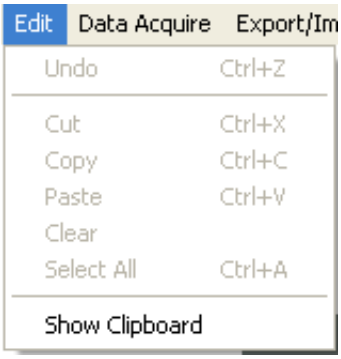
File Menu

Quit



This exits the SDAS-5 program and returns to the SDAS system start screen. Exiting this way ensures that the system closes all open files and saves down all data buffered in memory.

Edit Menu

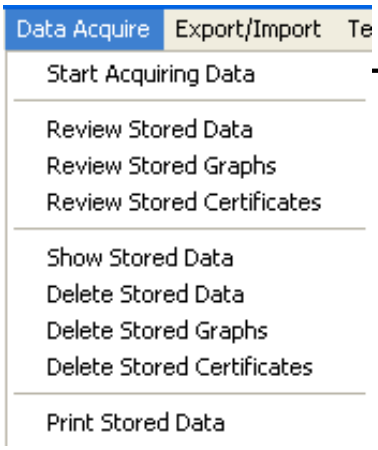


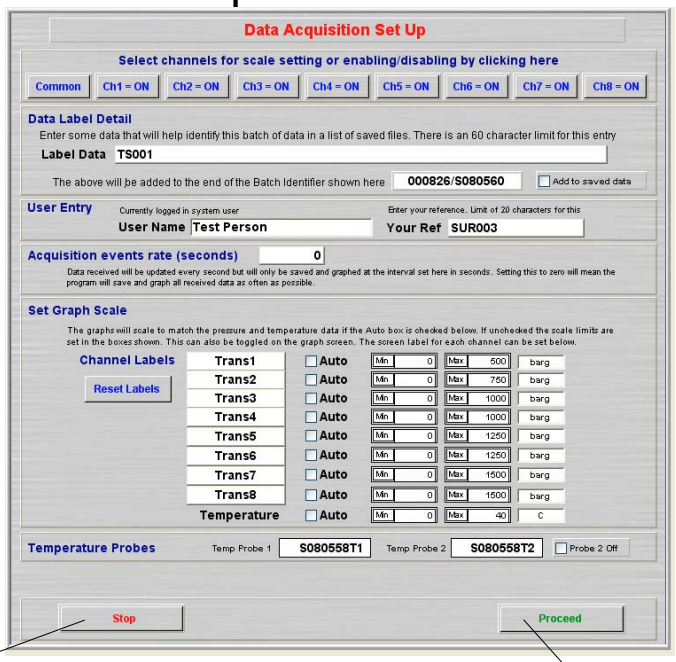
This menu performs system functions and is not selected by the user directly

Data Acquire Menu

Start Acquiring Data

This is the routine that acquires data into the SDAS. The transmitters and temperature probes should be connected to the SDAS unit before entering this routine.



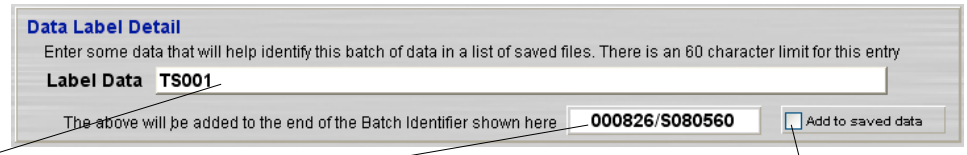


If chipped transmitters are used then those channels load automatically. If not then an alert is shown and the channels are switched off and need to be switched back on manually. You must choose the connected transmitter from the pop-up serial number list. Range and units are added from the data held in the system. Channels with no transmitters cannot be left on.

This stops this routine and returns to the main screen.

This leads to the next screen

The operation of this screen has several components and to aid explanation the screen will be divided into these parts



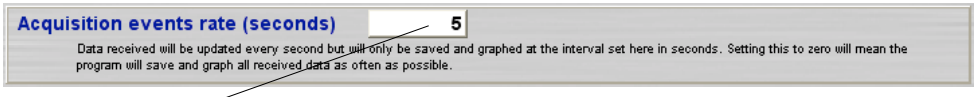
When opened this entry is blank - an example entry has been added for illustration. The user can enter an additional data label up to a limit of 60 characters.

This forms the first part of the data label. The first part is unique to this data file and is supplied from the file as the next available. The next part is the serial number of the SDAS being used. These cannot be altered by the user.

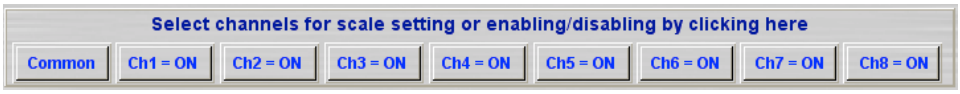
This allows this new data to be added to the end of an existing data label file. A list pops up to choose the one required.

The current user name is given here and cannot be altered in this screen. The current user can be changed either by restarting the SDAS or from the Utilities menu

A user reference can be entered here. This is restricted to 20 characters but otherwise can be any combination of alphanumerics. An existing reference can be entered. Using the same reference can be used to group tests together for review. A search will find them all and list them



This sets the rate in seconds that data is gathered into the database file. The digital display is updated every second but the graph and data file are updated at the rate set. The initial setting is to the default value which can be altered in the Utilities menu. Setting the rate at zero will gather data as often as possible. Currently this is 1 per second.



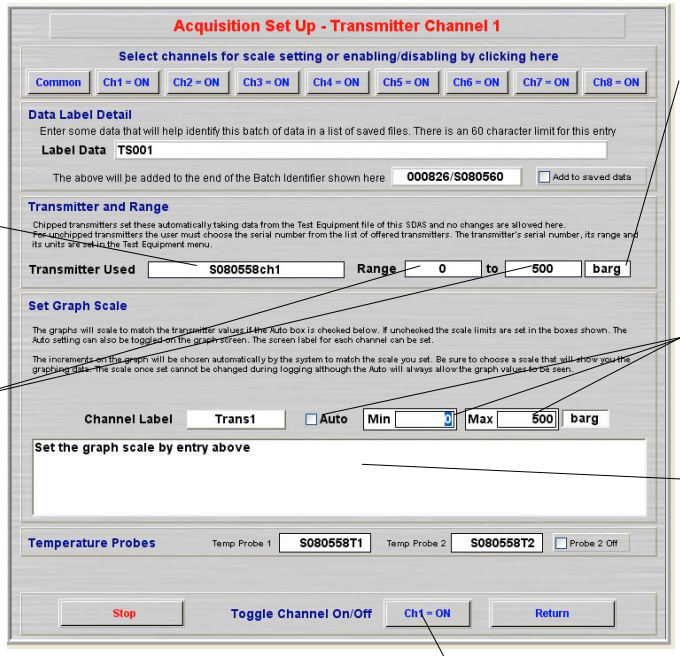
Clicking on any of the active Ch button takes you to that channel's setting page.

This shows the screen for setting screen for Channel 1

If a chipped transmitter is used then the serial number is loaded here automatically and this field is disabled. If not then you must choose a transmitter from the pop-up list to proceed

The range is entered automatically and cannot be altered by the user here.The range is entered from the data held by the system for that transmitter. The range and/or units can be changed in the Test Equipment section of the program.

The range set for each channel in these screens determines the range for any graph showing any of those channels. The scale is set to the largest range of the channels currently showing on the graphing screen.



When the channels showing are not the same units then a percentage scale will show. The scale set here only applies when the channels displayed are all the same units.

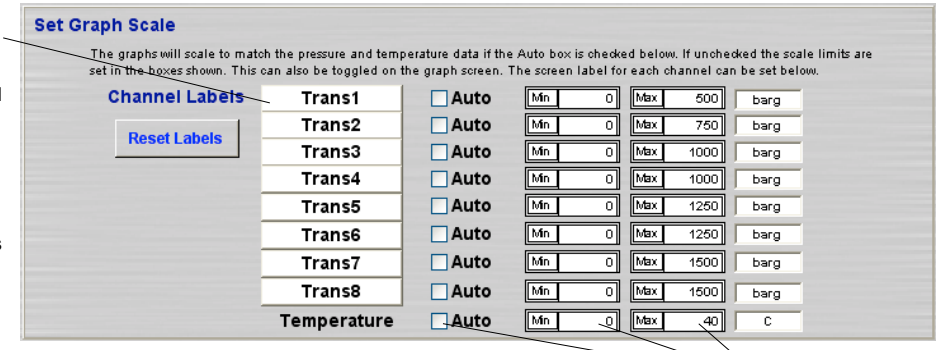
The graphing scale can be set here or set to automatically range by checking the Auto box

When the Min or Max is set here then a comment is shown here either accepting or advising on your choice

Clicking here toggles a channel off or on

Any channels left as Ch?=OFF here are then off for the duration of this data session and will not appear on any chart or data file. The scale for the logging screen graph is set to automatically range from the lowest visible scale to the highest visible scale. Choose the scales to suit this at this stage as these cannot be altered during logging. Note that when channel units displaying on a graph are not the same then the range 0 to 100% of the device ranges will be used regardless of the scale chosen for any. Selecting to show just graphs of the same units will restore this function.

The default labels of the transmitters can be reset here to a more meaningful label for a user's test. This labeling is used on the screens and printed test results and are saved with the data. These can be set on the previous Channel screen too.



The scales of the 4-20mA channels are set on their channel screens as described above and are disabled here

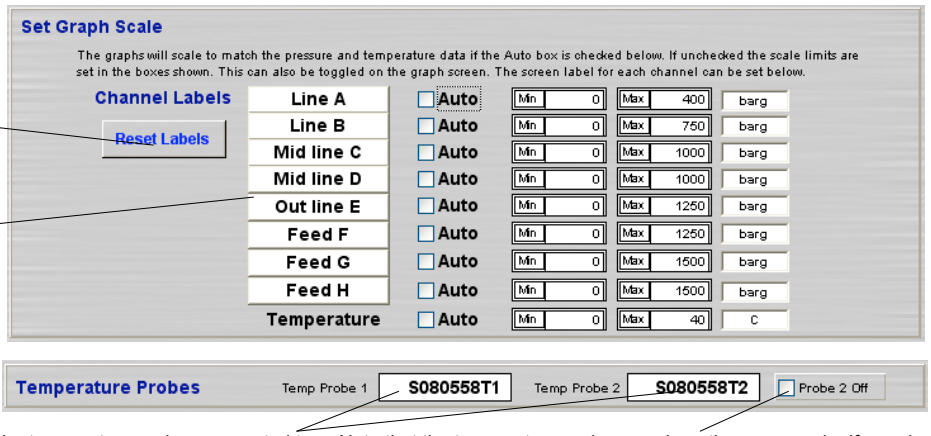
The temperature graphing scale can be set here or set to automatically range fit by checking the Auto box

Labeling Channels

The labels can be reset to the default by clicking here

Some sample labeling has been added here

The labeling is retained for further tests until the system is restarted or Reset Labels is clicked



This is the serial number of the temperature probes connected to Temp 1 and 2 input. This must be entered in the Equipment file. If not then you are advised of this and cannot proceed until you have entered it.

Note that the temperature probes graph on the same scale. If a probe is not connected then the system will give an output of -999 degC for that probe as zero would be misleading. A constant -999 will distort the shared graph in Review mode or when Auto is checked. To avoid that you can opt to have the single probe on Temp Probe 1 and then check the Probe 2 off box here. Probe 2 will then be ignored and not graphed.

When Proceed is selected in the above screen the connected transmitters are read by the system over 5 seconds and an average of those values is shown in the Zero Offset screen below. This allows any zero offset of the transmitter to be removed if required before any test starts. Any offset chosen here will be logged with the data. This allows any amount zeroed in error to be explained or corrected later.

Zero Offset

The transmitter labels, serial numbers and range are displayed here.

The output from the transmitters are sampled for 5 readings and the averages are shown here. If the value is more than 5% of the span then this value shown in red. If the bottom range value of the transmitter is not a zero amount then this is shown in green. Red or green coloured values are deselected automatically for offsetting and you must be clear you know why if you do offset these.

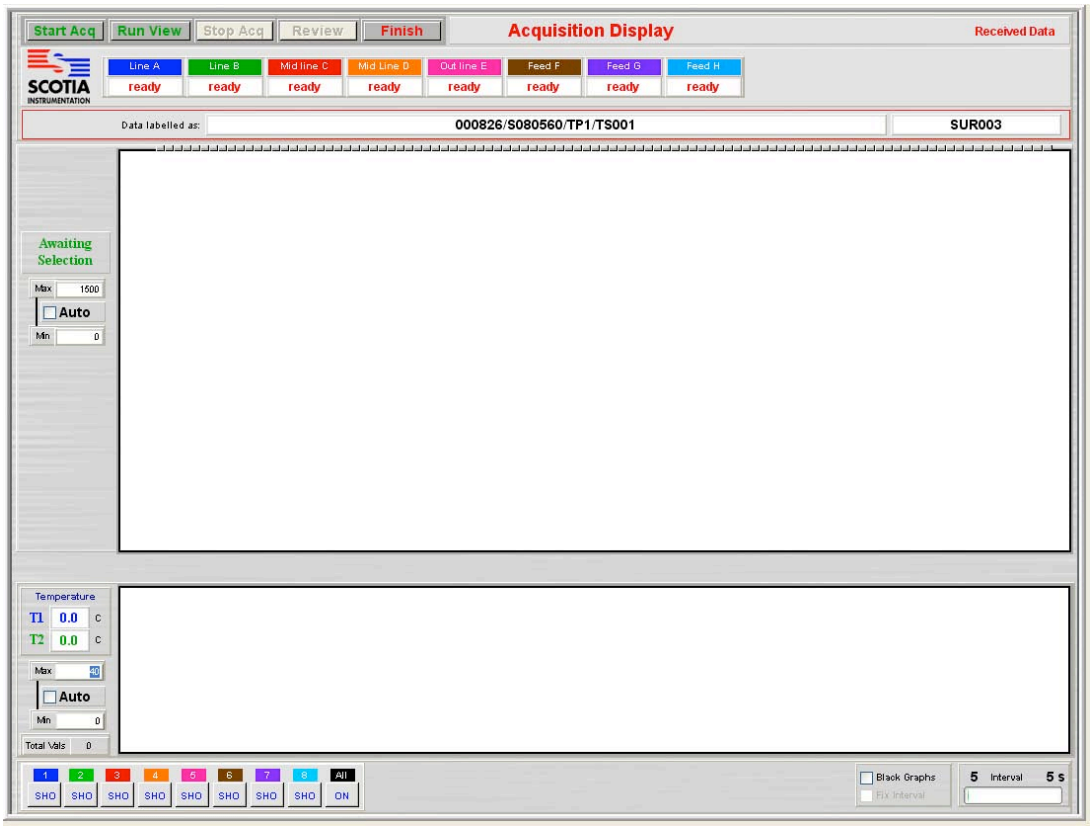
If the reading from the transmitter is below 5% and the lower range value is zero then this is checked automatically. It can be checked manually. When checked the current reading will be offset from any values read from the transmitter. The operator is expected to know when this is a normal zero offset and when a 'real' value is currently on the transmitter. 'Real' values should not be reset to zero as this will give a false reading from the transmitter for this test.

This continues to the next screen without applying any suggested offset.

This applies the suggested offset if Set checked and leads to the next screen

Acquisition Display

Before acquisition of data starts this screen loads with blank graph areas and transmitter value displays show Ready as no value has been read from any transmitters or temperature probes yet



The operation of the Acquisition Data Display screen has several components and to aid explanation the screen will be divided into parts

Control buttons

Acquisition can be started, stopped and restarted with this button

Once acquisition has started this becomes active and leads to the Review mode

This finishes any running routine, closes this screen and returns to the main screen

This runs the acquisition routine showing the current readings but does not save or graph the data.

If an interval is not chosen then zero is shown here and the graphic is hidden

This counts down the time in seconds until the next acquisition event

This bar shows graphically a progress to the next data point

This indicates the event time interval that is currently set

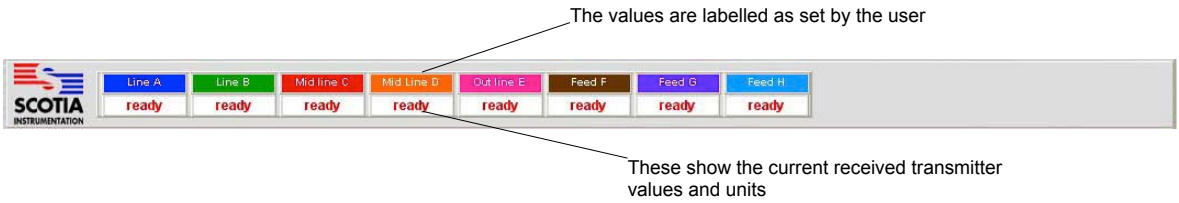
This shows the current data label for acquisition

The data label comprises of the following components;

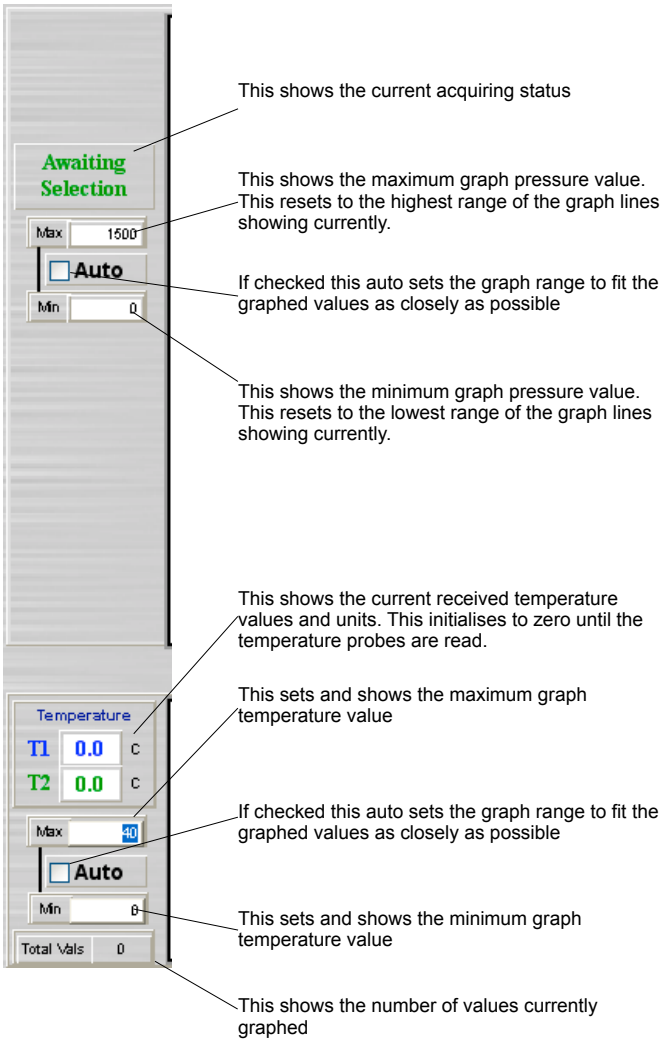
000826 - This is the unique system ID.
S080560 - This is the unique SDAS serial number and identifies the SDAS unit being used. This should be the same as the Serial Number on the back of the SDAS unit.
TP1 - This is the identifier of the current user.
TS001 - This is the text identifier added by the user and can comprise of any text. The limit for this part of the label is 60 characters.

This shows the user reference

Transmitter Readings



Value Axis Ranging



Channel Selection

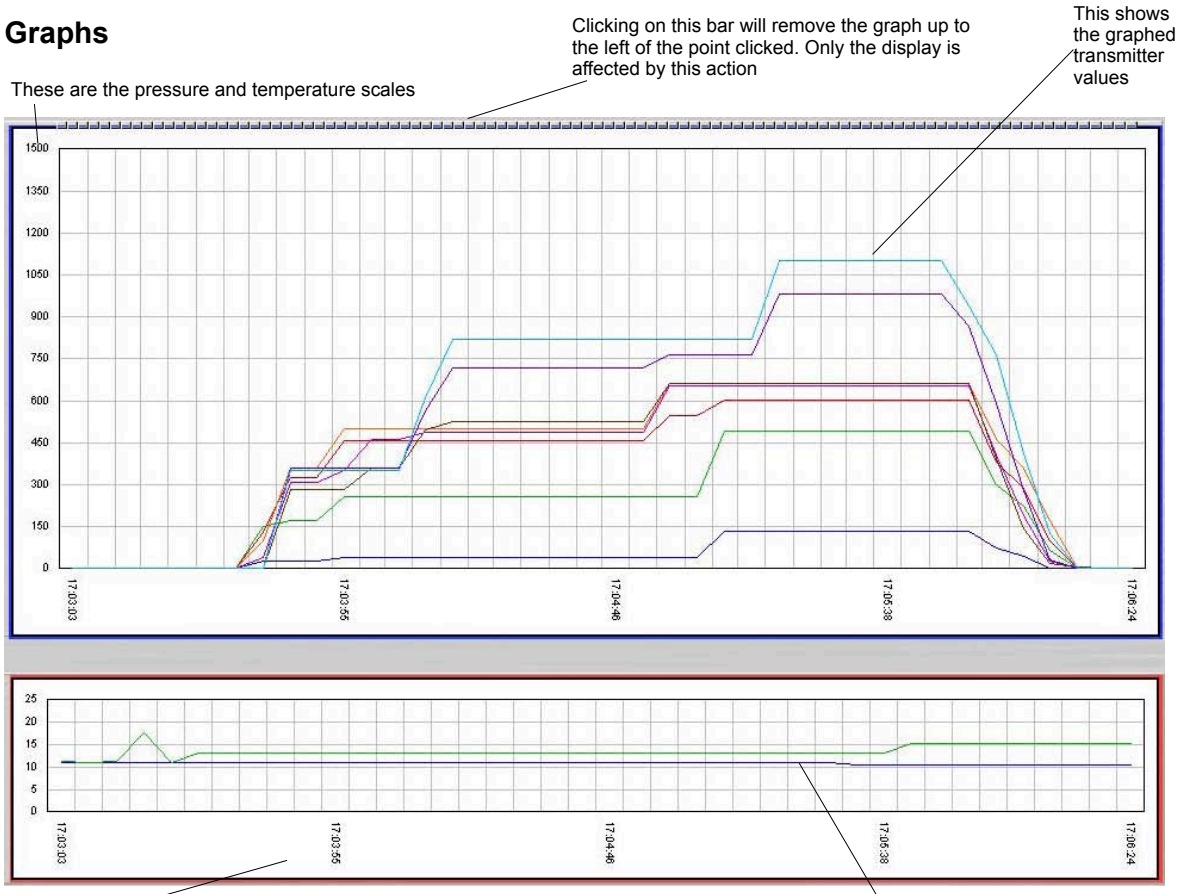
These control the channels displayed - clicking a channel control toggles it from on SHO to off HID. Any channel not selectable is shown as disabled DIS. 'All' allows all channels to be selected as on SHO. The colours on the channel labels match the colour of the graph line. Note that you cannot show no channels. If only one channel is showing and you click on it to switch it off then nothing will change. The toggle action operates to this rule: if All is ON then clicking any channel switches to just show that channel. If all the channels have been switched on by clicking on them then clicking on any one simply switches that channel off and leaves the others on. The display of the channels on the graph only changes at the next logging event when the graph updates.

Graph appearance

Checking Black Graphs switches the background of the graph from white to black. In certain conditions this makes the graph easier to read.

This checks to show that the graphing limit has been reached and the graph detail will scroll left as more data is graphed. The system checks this as the condition occurs. This is a visual indication that scrolling is on.

Graphs



If the transmitters are not all in the same measurement units then a graph showing mixed units will show in percentage 0-100 and each scale is shown as a percentage of its range. When the channels selected for showing are all the same units the scale switches automatically to show the range of the greatest channel in the scale of the shared units.

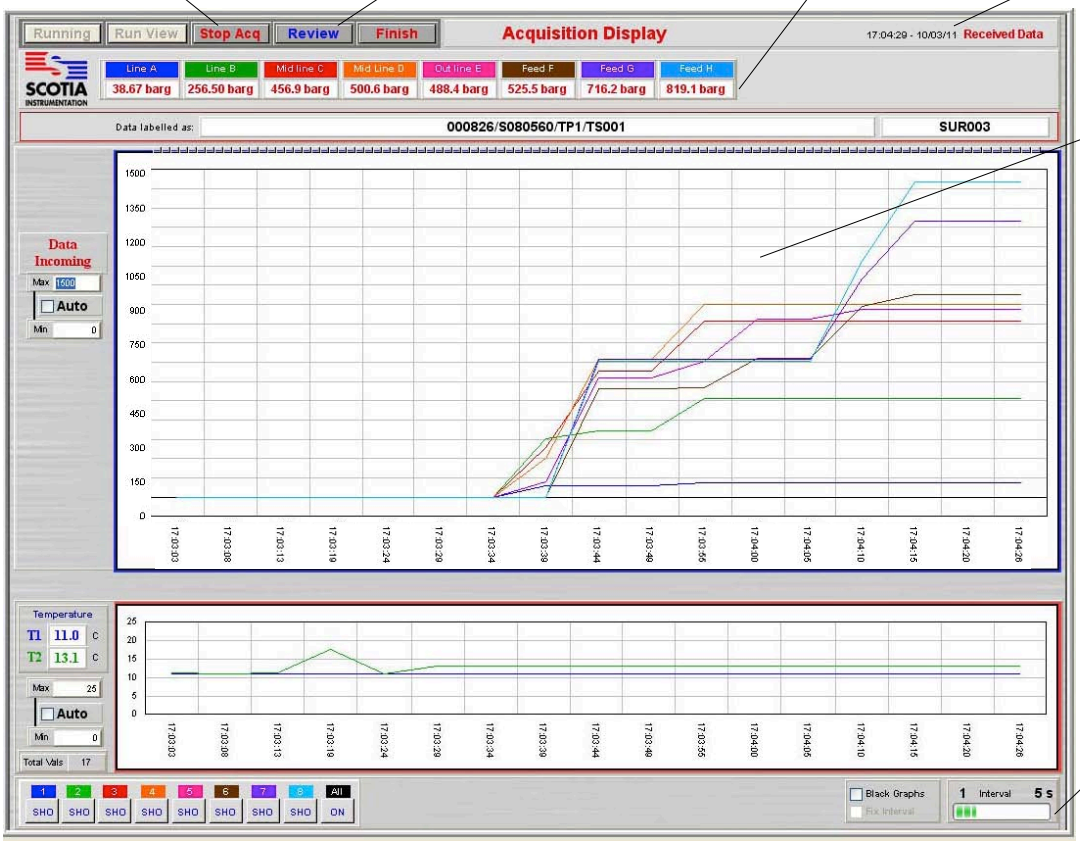
This shows an example screen receiving data

When receiving data these buttons alter to this form. Note that Start Acq has changed to Indicate that the routine is running. Run View is no longer selectable. Stop Acq is now active as is Review and Finish.

Review does not activate until eight data events have been stored. The button label indicates the countdown and is inactive. If the user access level does not allow reviewing while logging then this button will always be disabled here

These show the current received values on the transmitter channels. These are updated every second regardless of the logging interval

This shows the current time and date being stored for acquired data.



The graph areas are dynamic and will size according the available screen area. The surrounding graphics remain the same size.

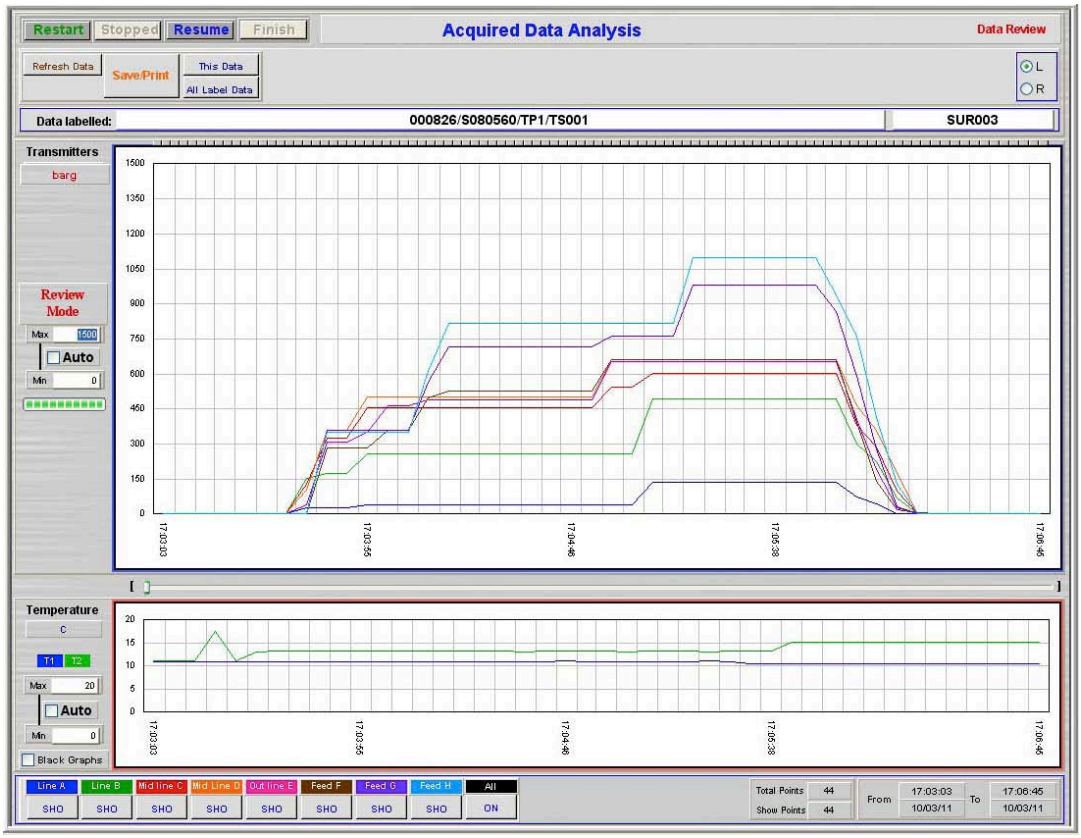
This shows the seconds until the next data logging event with the graphic.

When Stop Acq is clicked these buttons change to the following. Note that Running has changed to Restart. Run View is now selectable. Stop Acq has now changed to Stopped and is inactive.

If enabled clicking Review leads to the following screen

Review Acquired Data

Clicking the Review button while either still acquiring or with acquiring stopped will lead to this screen.



The graphed data shown here does not update with new data when the data is still being acquired. The Refresh Data button needs to be used to manually update to the latest data.

The operation of the Acquisition Data Analysis screen has several components and to aid explanation the screen will be divided into parts

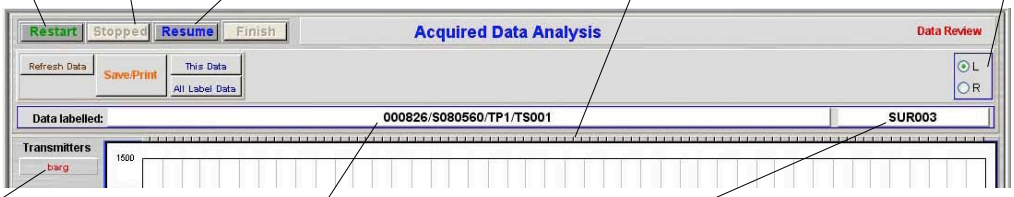
This restarts acquiring if it has been stopped

This stops acquiring if system is currently acquiring

This returns to the acquiring screen

L-R trimming bar - Used in conjunction with the L and R buttons, clicking anywhere on this bar will move the left or right end of the graph up to the point clicked.

This toggles to left or right for the graph trimming bar



This shows the Transmitter units. If more than one unit is being graphed then this shows 'various' and the graph shown is in percentage

Clicking here gives a pop up list of the saved data files labels. Selecting from the list will load that file into the Review graphs below even if acquiring is continuing to the original file.

Clicking here gives a pop up list of the saved User labels. Selecting from the list will load that file into the Review graphs below even if acquiring is continuing to the original file.

This resets the graph to show all the current label data stored

This is the current mode identifier

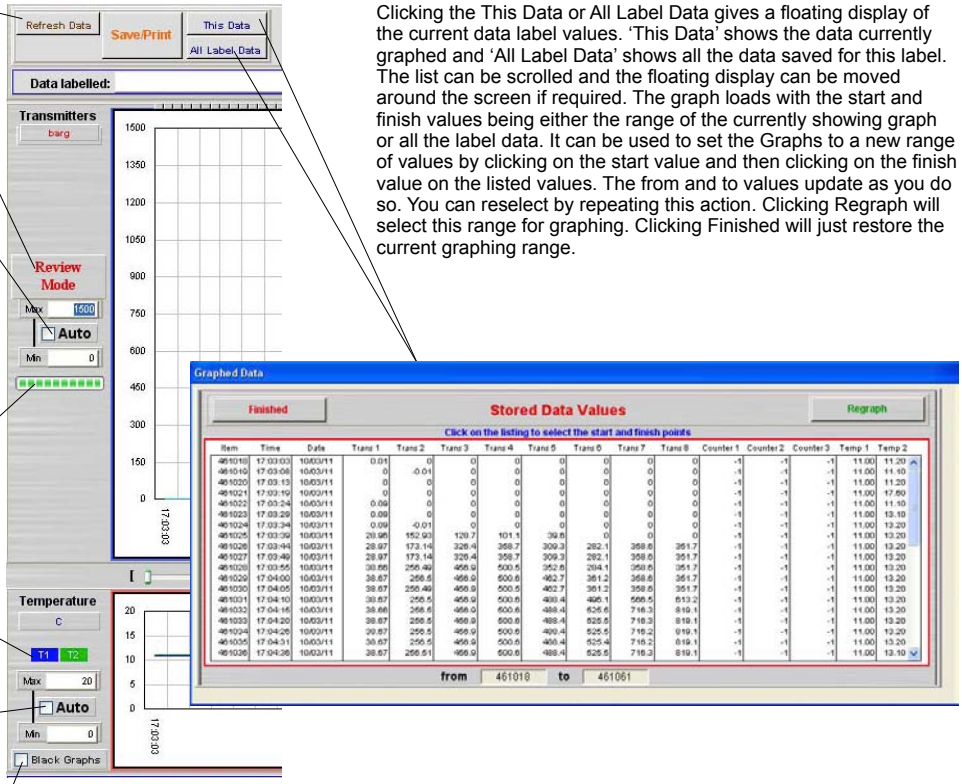
While Auto is checked the graph will autorange in the values axis to best fit all currently shown graphed values. If unchecked the graph range is set by typing values into the Max and Min boxes. Note that moving the cursor out of the range box activates the change.

This is a visual percentage indicator of the amount of data showing for the current data label.

This shows the colour coding of the graphed temperatures

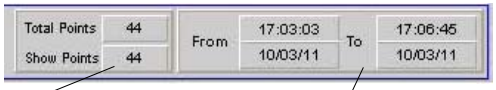
While Auto is checked the graph will autorange in the values axis to best fit all currently shown graphed values. If unchecked the graph range is set by typing values into the Max and Min boxes.

If checked this sets the graph to display on a black background



Clicking the This Data or All Label Data gives a floating display of the current data label values. 'This Data' shows the data currently graphed and 'All Label Data' shows all the data saved for this label. The list can be scrolled and the floating display can be moved around the screen if required. The graph loads with the start and finish values being either the range of the currently showing graph or all the label data. It can be used to set the Graphs to a new range of values by clicking on the start value and then clicking on the finish value on the listed values. The from and to values update as you do so. You can reselect by repeating this action. Clicking Regraph will select this range for graphing. Clicking Finished will just restore the current graphing range.

These control the channels displayed - clicking a channel control toggles it from showing SHO to hidden HID. Any channel not selectable is shown as disabled DIS and does not show on the graph. All allows all channels to be selected as showing SHO unless they are currently DIS. The colours on the channel labels match the colour of the graph line and the labels are those set by the user at setup. The toggle action operates to this rule: if All is ON then clicking any channel switches to just show that channel. If all the channels have been switched on by clicking on them then clicking on any one simply switches that channel off and leaves the others on. You cannot select to have no channels on. The last one on stays on if you choose to turn it off.



These show the number of graph points in total and showing on the current graph

These show the date and time range of the currently showing graph

Data Pointer

Data Pointer bar

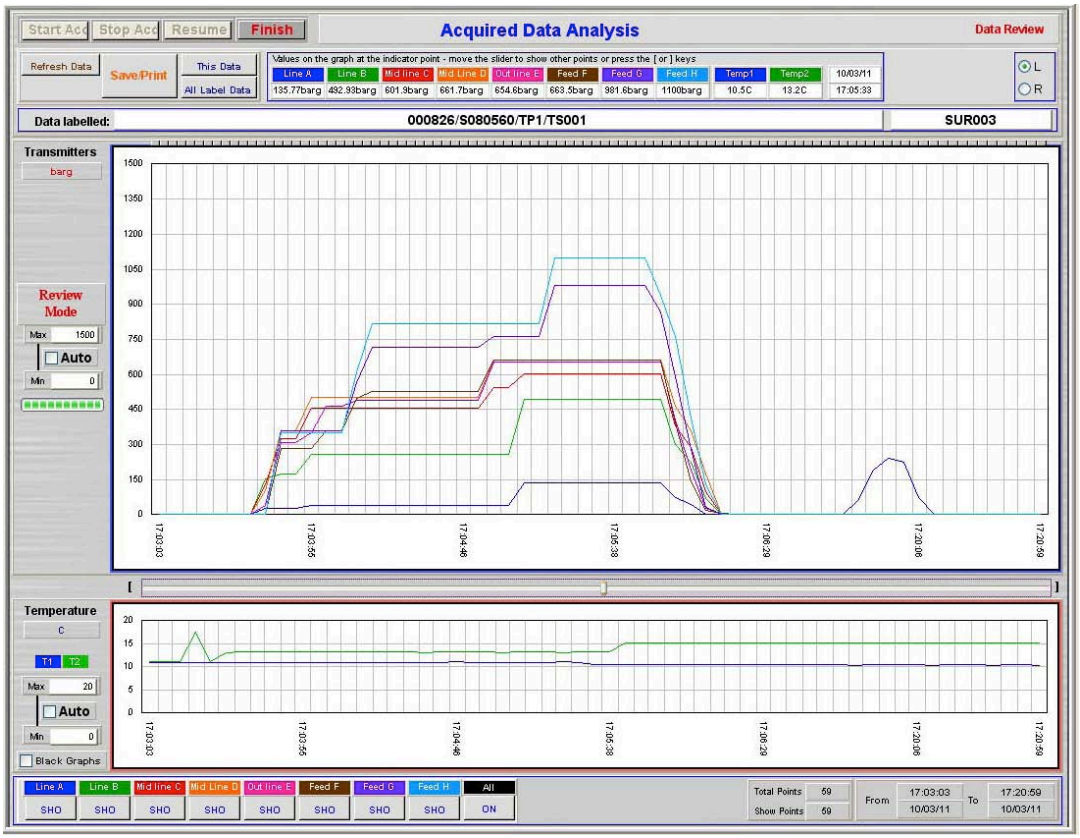
The data pointer is inactive when at its fully left position. It can be activated by clicking anywhere on the bar length or dragging the Data Pointer indicator using the mouse. The indicator point can also be moved by using the] bracket to move it one data point at a time to the right or [bracket to move back in the time line. When the Data Pointer bar is selected by clicking on it the left and right keyboard arrows do the same as the [ ] brackets.

Once data pointer is moved from the fully left position the values of the channels corresponding to the position of the data pointer appear at the top of the screen. Only the channels showing on the graph display their values. The channels are coloured the same as the graph and are labelled as set by the user. Moving the Data Pointer back fully left causes this part of the display to disappear again.

Transmitter channels

Temperature ranges

Data point time and date



This leads to the Saved Graph screen which allows saving and printing of the graph as a record of the test shown. The data range currently viewed and scales selected are used in the printing.

Saved Graph Screen

The User's company name appears here. This is set in the Utilities menu

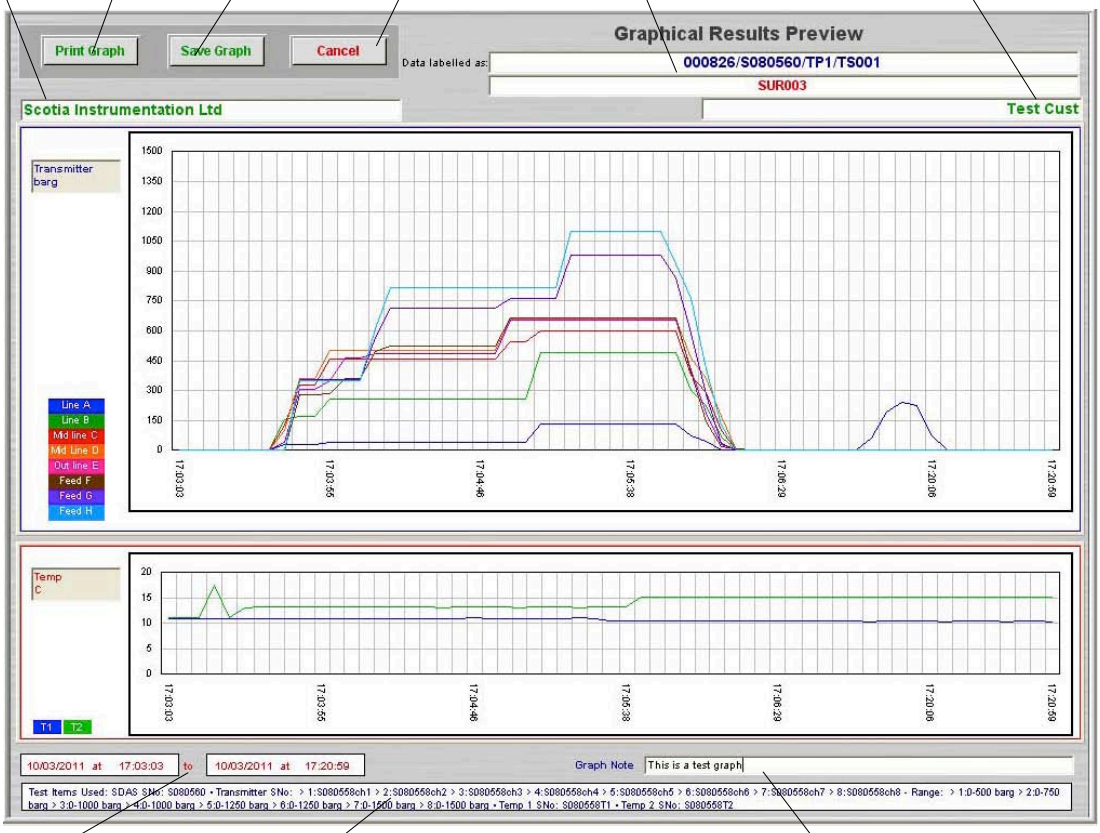
This saves and prints this graph

This stores this graph in the Graph file

This exits this screen without saving the graph

These are the data references for this graph

The Customer name can be entered or altered here



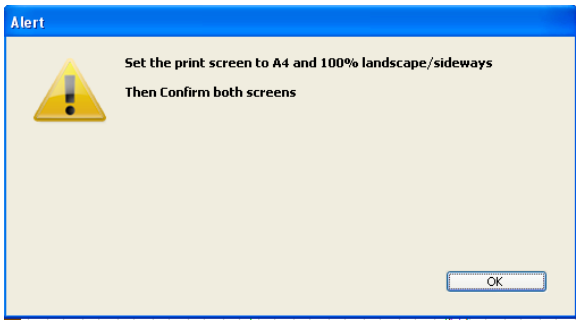
This shows the range of the graph with date and time

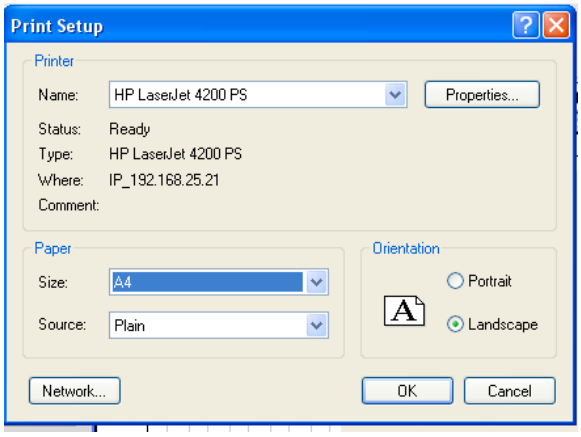
This is the equipment used for this test, SDAS serial number, transmitters serial numbers and ranges and the serial numbers of the temperature probes

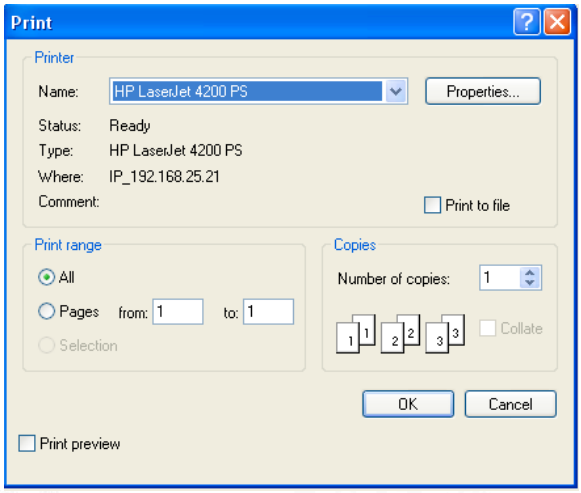
This gives an 80 character field which can be used to clarify why this graph is being saved or some other note

Printing Graphical Results

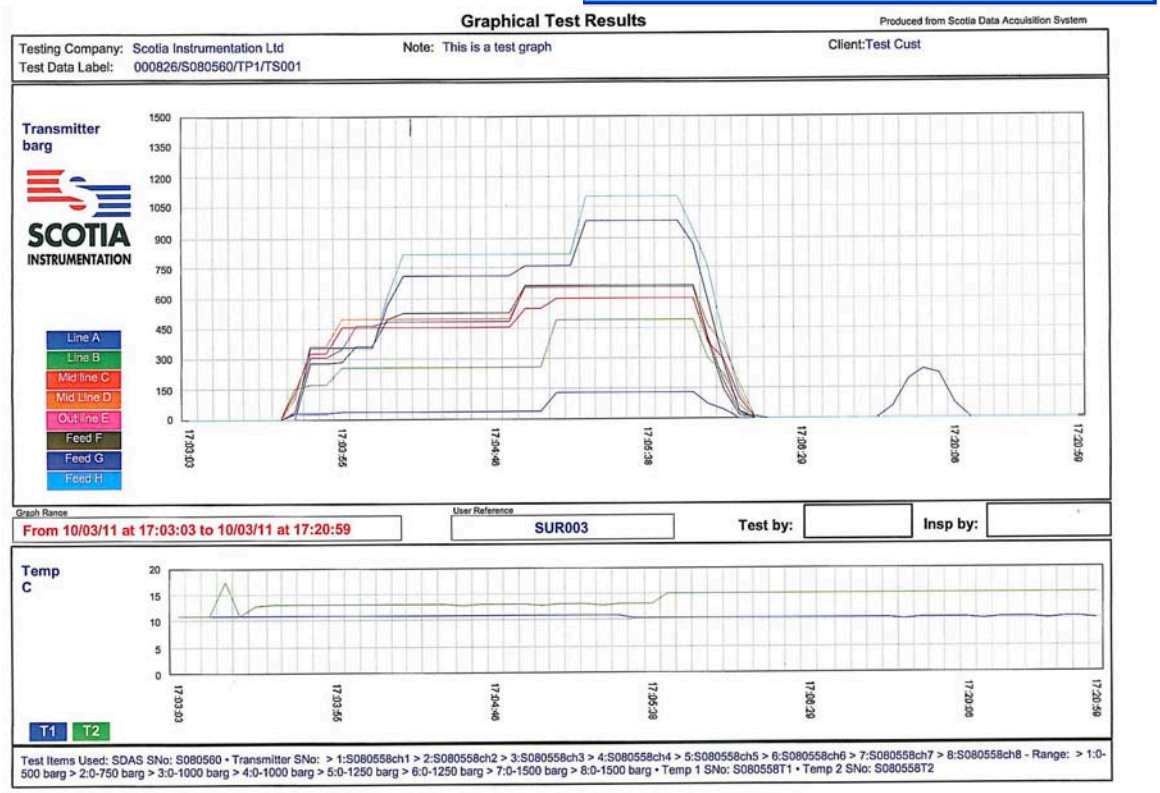
Clicking Print Graph on the previously displayed graph prints the following to the selected system printer. System print dialog boxes are displayed



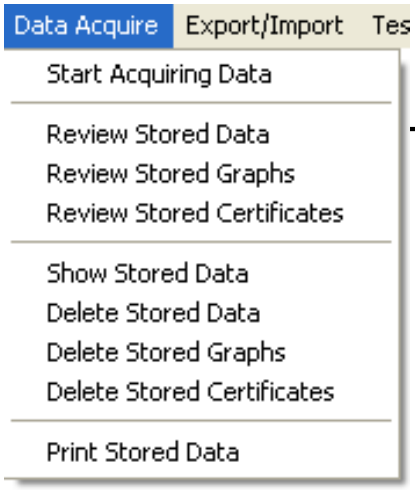




A print like this is produced on the printer

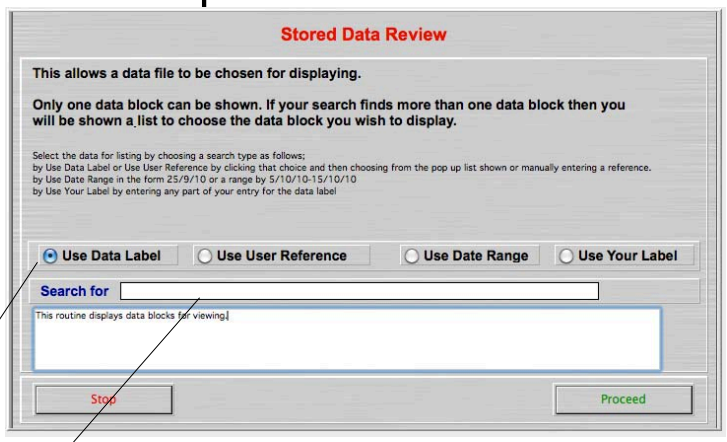


Review Stored Data

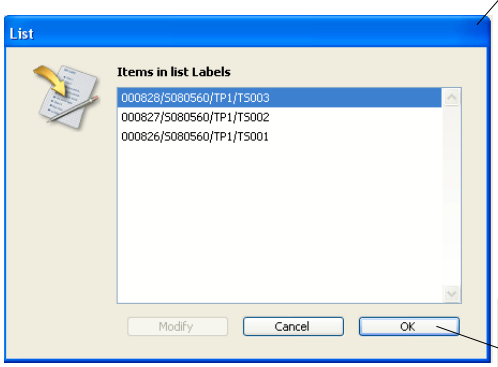


This routine allows currently stored data to be reviewed. Note that the data from one data label is regarded as unique. Only one set of this unique data can be shown on the graph screen at the same time. Choosing using the Data Label gives just one set of data but choosing by other methods can lead to more than one and further choosing may be necessary to get to only one.

Use Data Label



Choose the search type



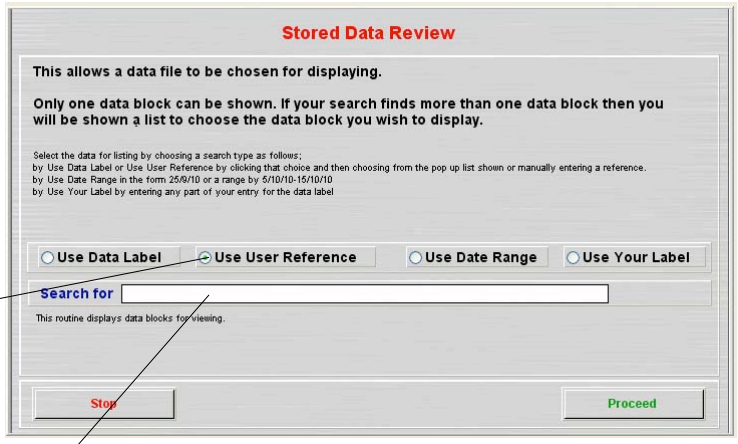
Click on the search type or the Search for entry to show this pick list if you have chosen the Use Data Label

Click on the one required and then click OK to select this choice.

Click Stop to return to the start screen

Click Proceed to show the selected data

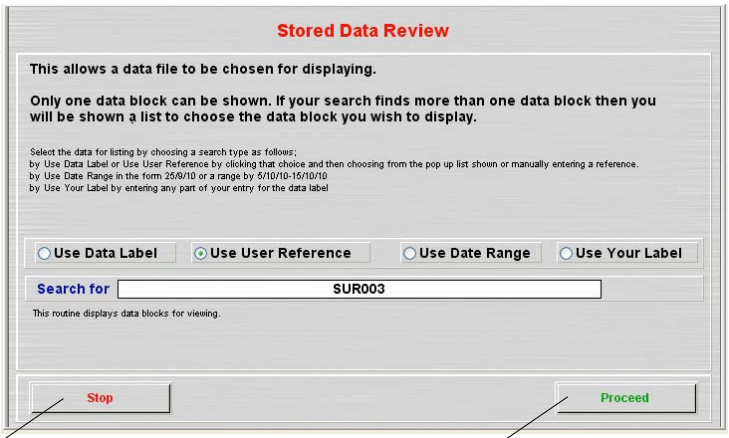
Use User Reference



Choose search by User Reference

Click on the search type or the Search for entry to show this pick list if you have chosen the Use Data Label

Click on the one required and then click OK to select this choice.

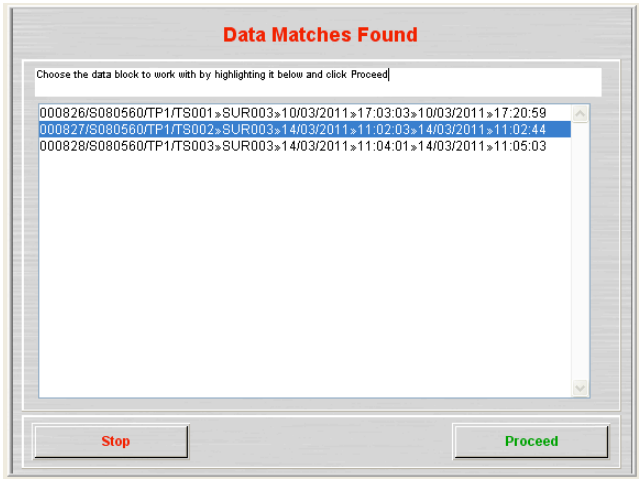


Click Stop to return to the start screen

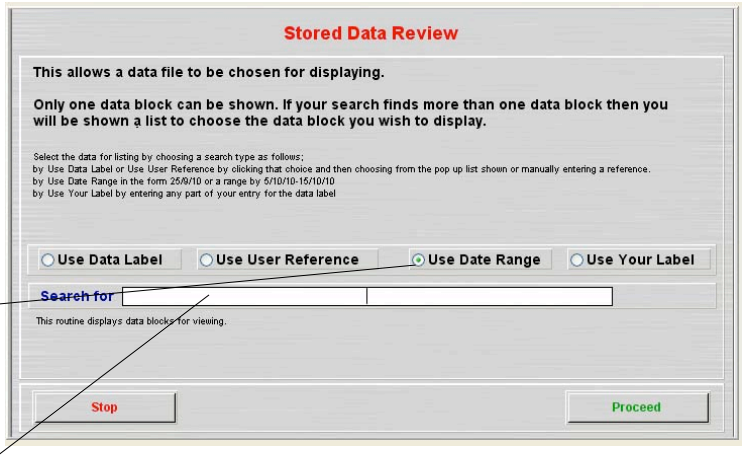
Click Proceed to show the selected data

If only one data label set of data has this User Reference then the system will proceed to show this data on the Acquired Data Analysis screen. If more than one data label set of data has this User Reference then a list is shown for the user to make a selection. To aid selection data is added to the selection line. Each line has the Data Label > the User Reference > Test start date > Test start time > Test finish time

Choose from the list and then click proceed to show this data set on the Acquired Data Analysis screen

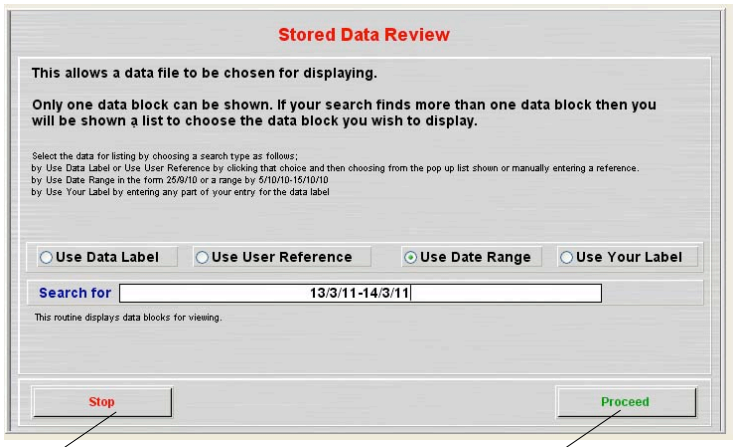


Use Date Range



Choose search by Date Range

The cursor is placed in the answer field to allow the user to type the date or date range required. A single date is entered in the form DD/MM/YY (eg 14/03/11) but the system will accept single numbers or extended years - 14/3/2011 perhaps. A range of dates can be entered in the form 13/3/11-14/3/11 and any data labels within the range of the dates entered will be listed.

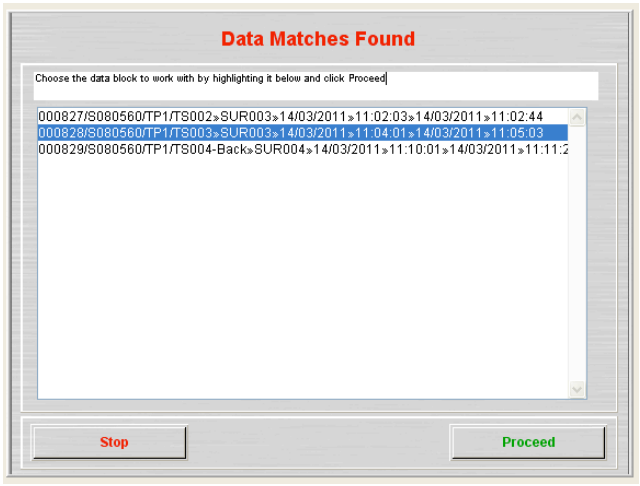


Click Stop to return to the start screen

Click Proceed to show the selected data

If only one data label set of data has this date or date range then the system will proceed to show this data on the Acquired Data Analysis screen. If more than one data label set of data has the date or range of dates then a list is shown for the user to make a selection. To aid selection data is added to the selection line. Each line has the Data Label > the User Reference > Test start date > Test start time > Test finish time

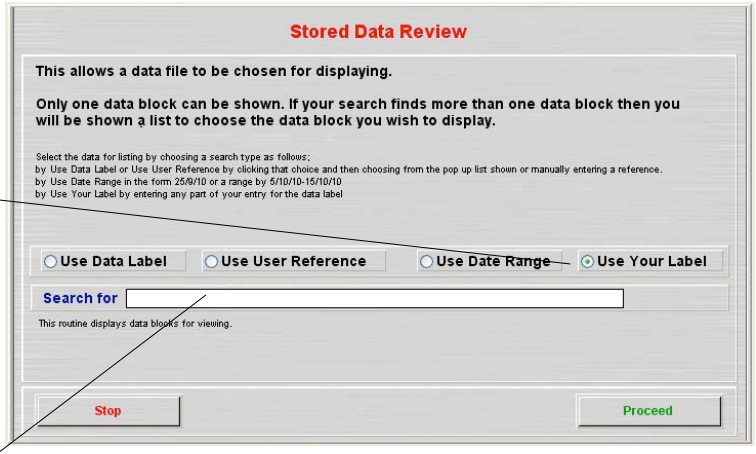
Choose from the list and then click proceed to show this data set on the Acquired Data Analysis screen



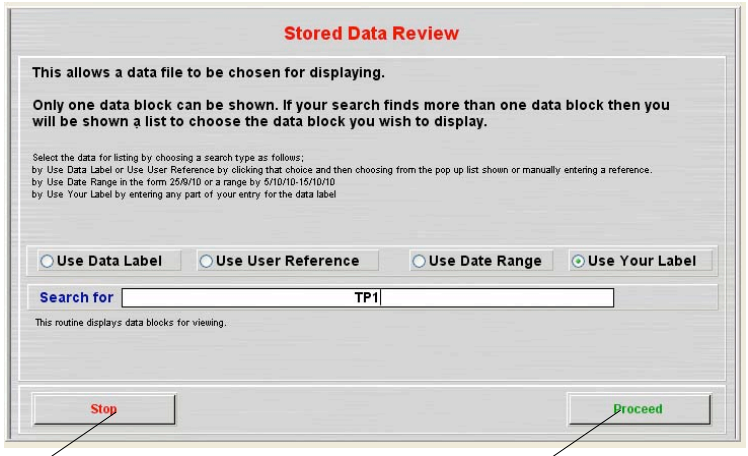
Use Your Label

This routine searches the Label Data for any instance of the entry here. It can be used to search for a user initials, the data entered by the user for the end of the label and for the serial number of the SDAS where data is stored for more than one SDAS.

Choose search by Your Label



The cursor is placed in the answer field to allow the user to type the data for the search. Any text can be entered. Any instance of the data entered will be found as a match. Be as specific as possible to avoid multiple matches.

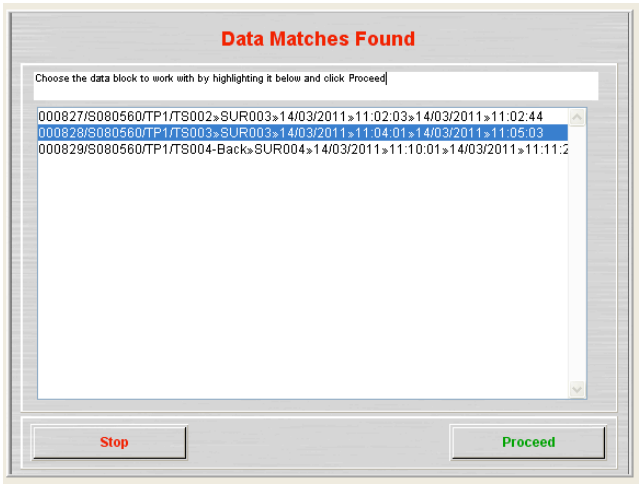


Click Stop to return to the start screen

Click Proceed to show the selected data

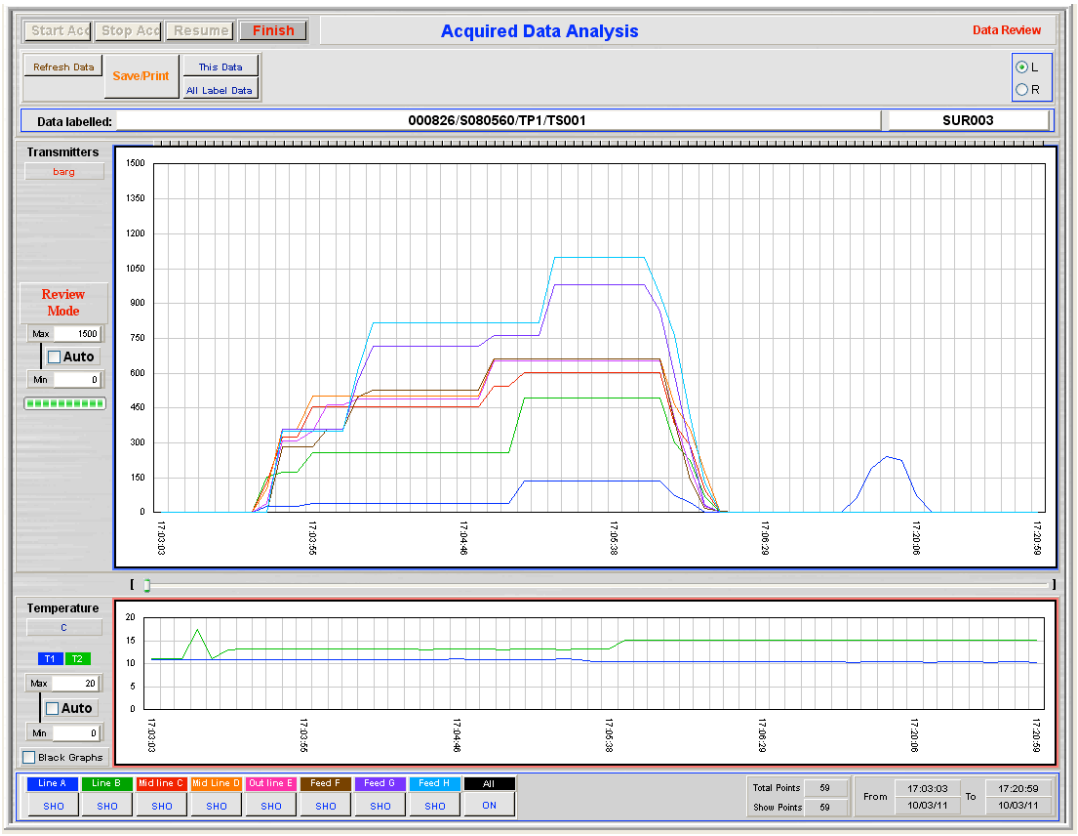
If only one data label set of data has this data then the system will proceed to show this data on the Acquired Data Analysis screen. If more than one data label set of data has the data entered then a list is shown for the user to make a selection. To aid selection data is added to the selection line. Each line has the Data Label > the User Reference > Test start date > Test start time > Test finish time

Choose from the list and then click proceed to show this data set on the Acquired Data Analysis screen



Data Analysis Screen

The data for this Data Label is then selected and displayed graphically



The screen above will be divided into parts in order to describe the various functions

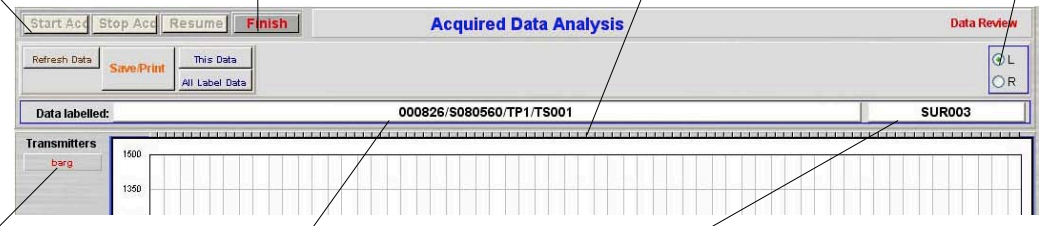
L-R Trimmer Bar

These buttons are used when this screen appears when acquiring data and are disabled here

This ends the Review of this data and returns to the main screen

L-R trimming bar - Used in conjunction with the L and R buttons, clicking anywhere on this bar will move the left or right end of the graph up to the point clicked.

This toggles to left or right for the graph trimming bar



This shows the Transmitter units. If more than one unit is being graphed then the graph shown is in percentage

Clicking here gives a pop up list of the saved data files labels. Selecting from the list will load that file into the graphs below.

Clicking here gives a pop up list of the saved User labels. Selecting from the list will load that file into the graphs below.

Stored Data Values

This resets the graph to show all the current label data stored

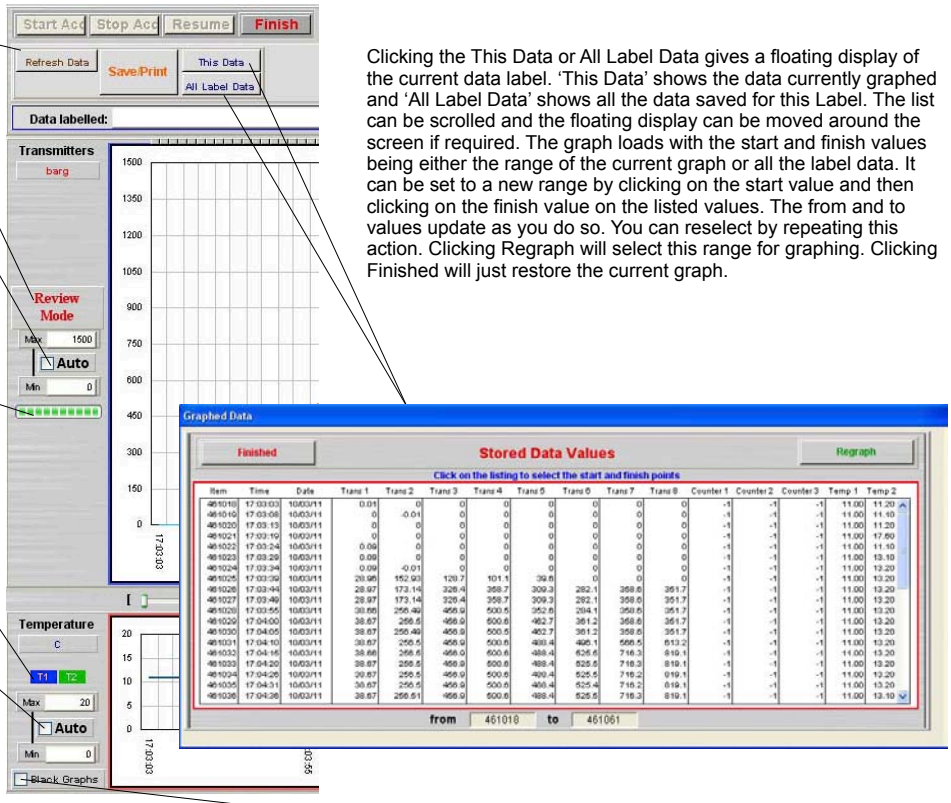
This is the current mode identifier

While Auto is checked the graph will autorange in the values axis to best fit all currently shown graphed values. If unchecked the graph range is set by typing values into the Max and Min boxes.

This is a visual percentage indicator of the amount of data showing for the current data label.

This shows the colour coding of the graphed temperatures

While Auto is checked the graph will autorange in the values axis to best fit all currently shown graphed values. If unchecked the graph range is set by typing values into the Max and Min boxes.

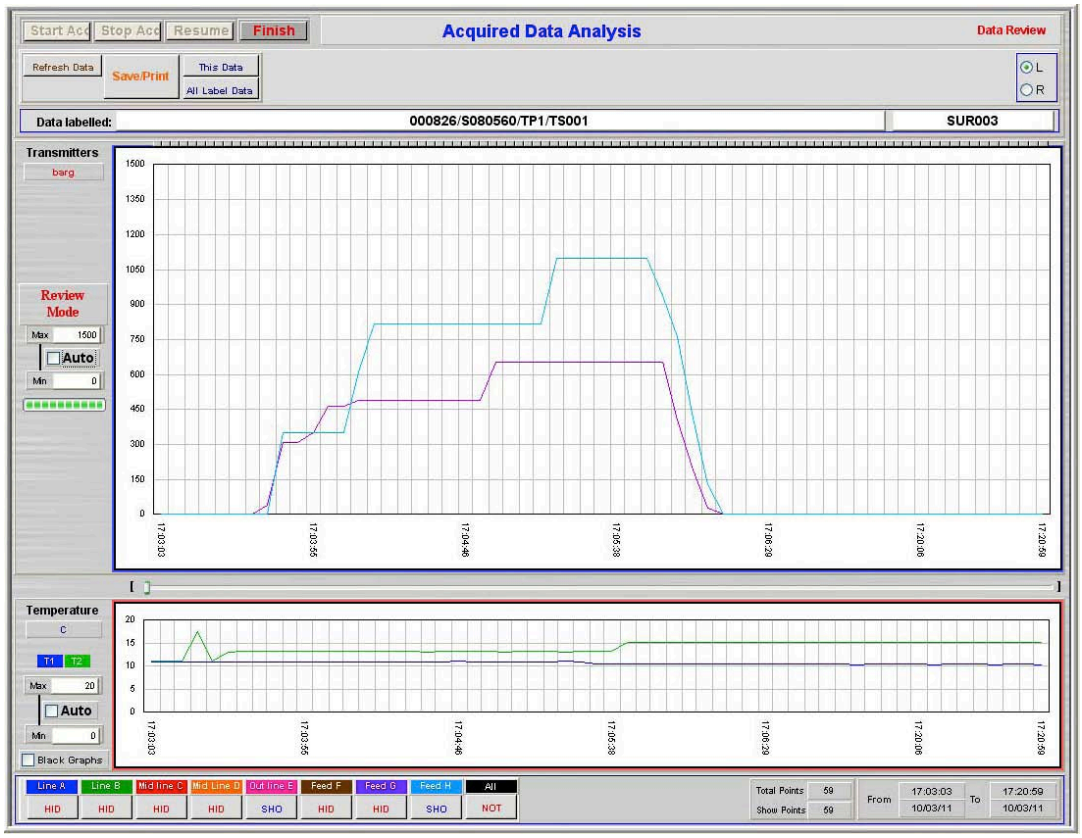


Clicking the This Data or All Label Data gives a floating display of the current data label. 'This Data' shows the data currently graphed and 'All Label Data' shows all the data saved for this Label. The list can be scrolled and the floating display can be moved around the screen if required. The graph loads with the start and finish values being either the range of the current graph or all the label data. It can be set to a new range by clicking on the start value and then clicking on the finish value on the listed values. The from and to values update as you do so. You can reselect by repeating this action. Clicking Regraph will select this range for graphing. Clicking Finished will just restore the current graph.

If checked this sets the graph to display on a black background

Channel Selection Buttons

These control the channels displayed - clicking a channel control toggles it from showing SHO to hidden HID. Any channel not selectable is shown as disabled DIS and does not show on the graph. 'All' allows all channels not set to DIS to be selected as showing SHO. The colours on the channel labels match the colour of the graph line and the channel labels are those set by the user at setup.

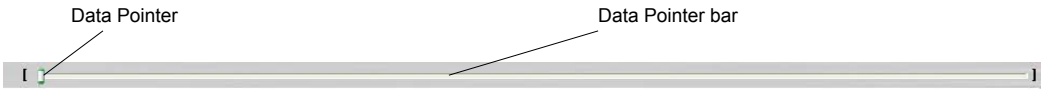


A toggling system is set up in the following way. If all channels are showing - either from just opening the screen or by clicking the All button then clicking a channel just selects that channel SHO and other active channels go HID. In all other ways clicking a channel at SHO sets it to HID and one at HID changes it to SHO.
Channels 5 and 8 have been set to SHO here and only those values are showing on the graph area.

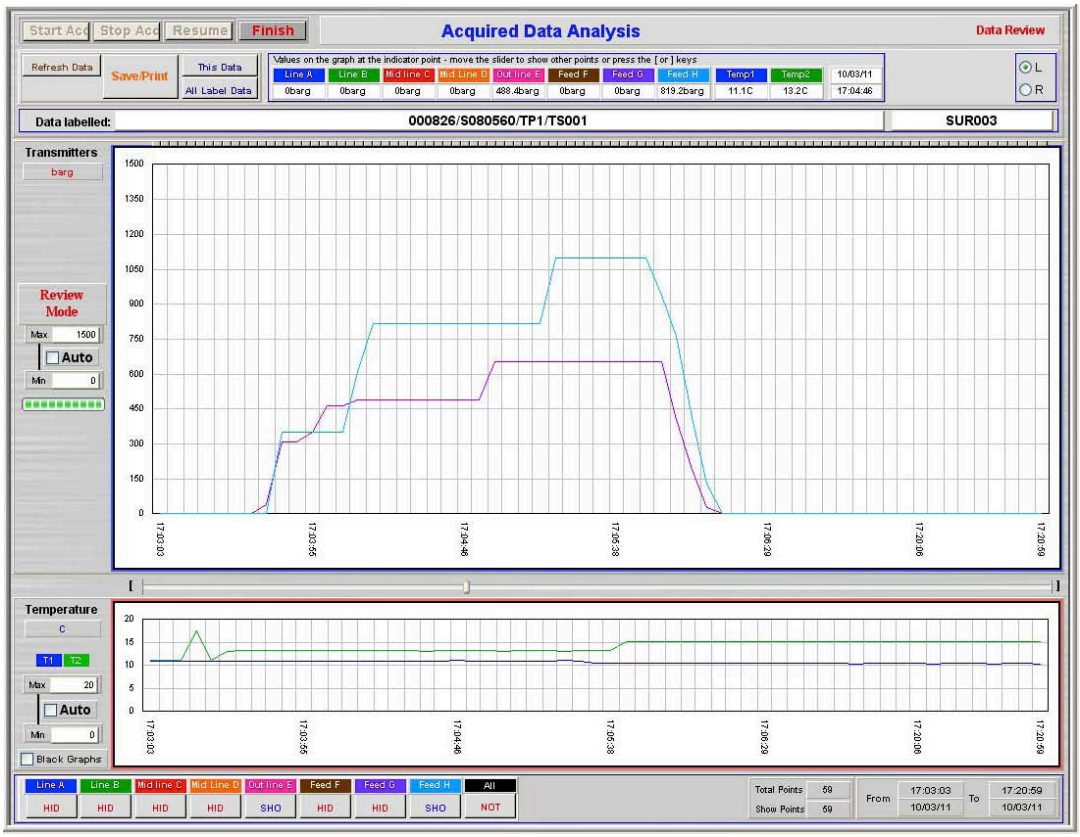
The temperature channels cannot be toggled off and on. There is an option to not show temperature 2 given at start up

Data Pointer Bar

Once data pointer is moved from fully left the values of the visible channels corresponding to the position of the data pointer appear at the top of the screen. Only the channels showing on the graph display their values. The channels are coloured the same as the graph and are labelled as set by the user. Moving the Data Pointer back fully left causes this part of the display to disappear again.



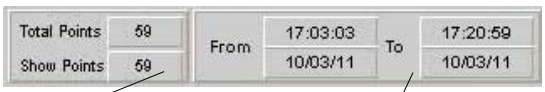
The data pointer is inactive when at its fully left position. It can be activated by clicking anywhere on the bar length or dragging the Data Pointer using the mouse. The indicator point can also be moved by using the] bracket to move it one data point at a time to the right or [bracket to move back on the time line. When selected by clicking on the Data Pointer the left and right keyboard arrows are the same as the [ ] brackets.



Only the channels currently showing have their values shown here

Transmitter channels — Temperature ranges — Data point time and date

Time Scale Indicator



These show the number of graph points in total and showing on the current graph

These show the date and time range of the currently showing graph

Save/Print button

This leads to the saved graph screen which allows saving and printing of the graph as a record of the test shown. The data range currently viewed and scales selected are used in the printing. Set up the graph you wish to save and/or print first.

Saved Graph Screen

The User's company name appears here. This is set in the Utilities menu

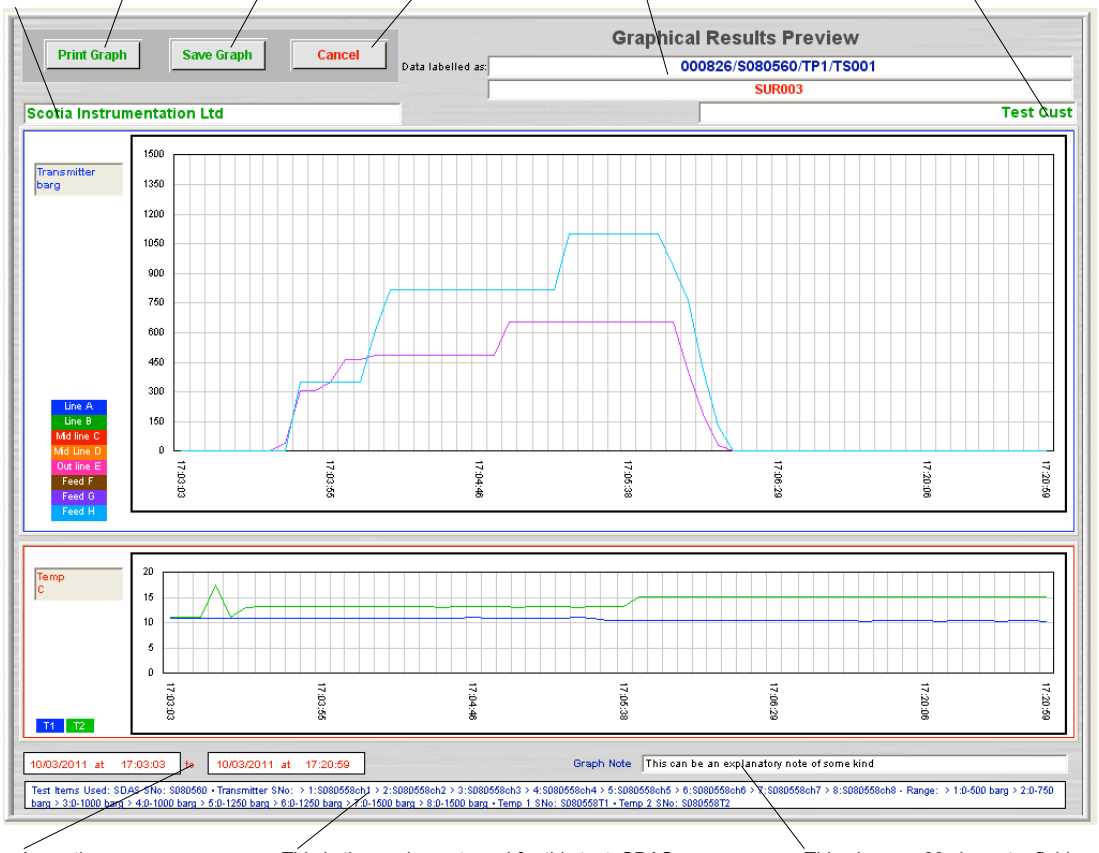
This saves and prints this graph

This stores this graph in the Graph file

This exits this screen without saving the graph

These are the data references for this graph

The Customer name can be entered or altered here



This shows the range of the graph with date and time

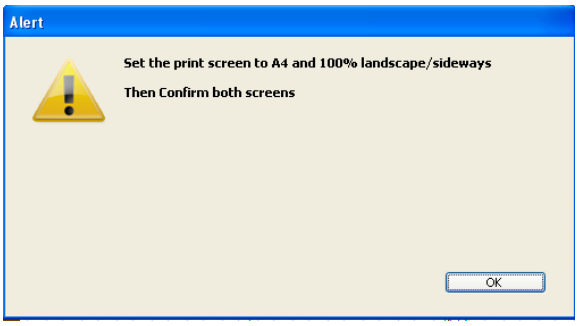
This is the equipment used for this test, SDAS serial number, transmitters serial numbers and ranges and the serial numbers of the temperature probes

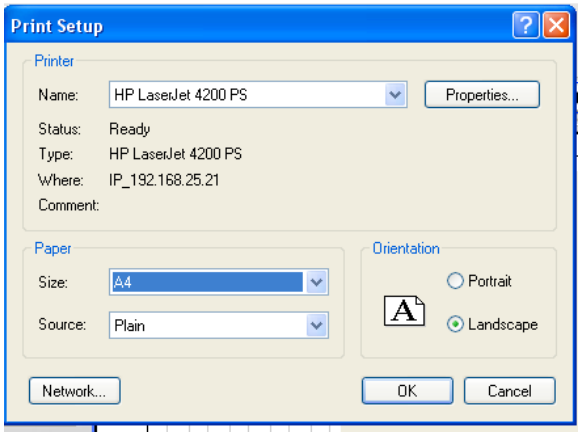
This gives an 80 character field which can be used to clarify why this graph is being saved or some other note

Printing Graphical Results

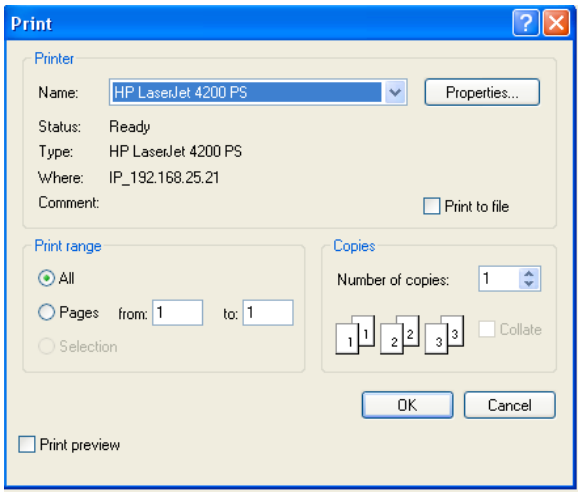
Clicking Print Graph on the previously displayed graph prints the following to the selected system printer. System print dialog boxes are displayed

A guidance screen is shown to advise the printing format to display the graph properly on the printer paper

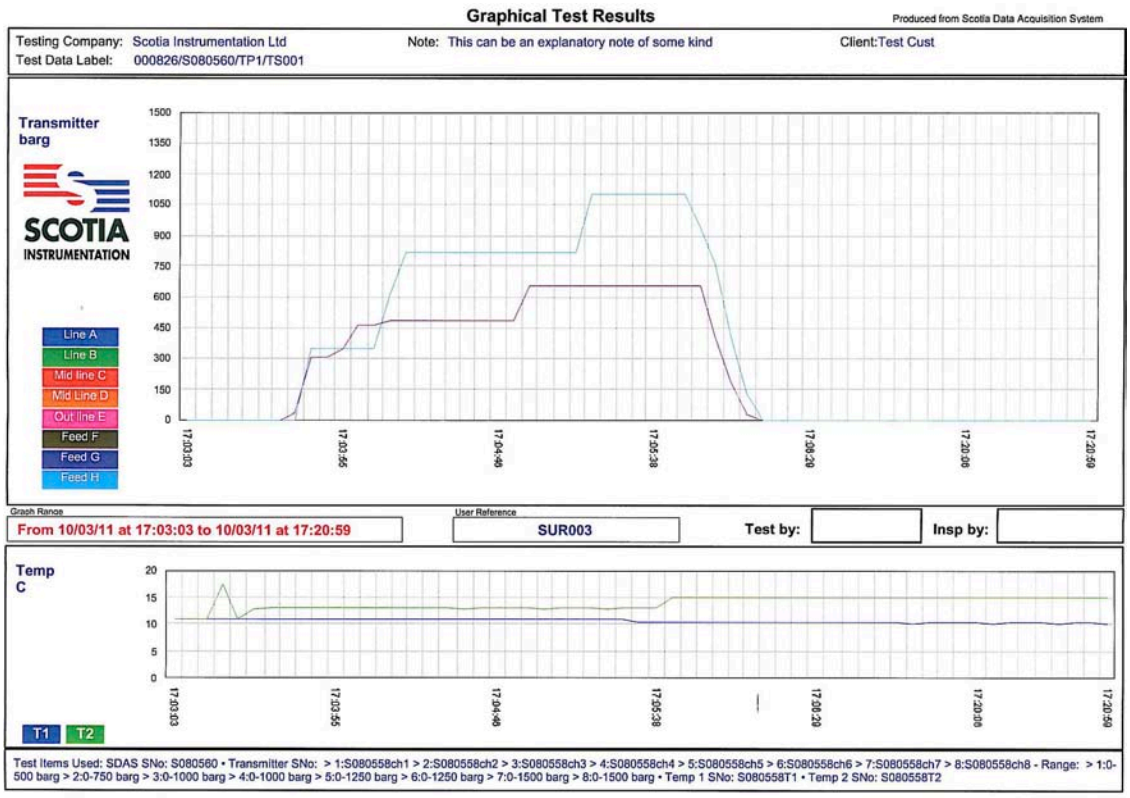




Set the values on the print settings screens and confirm both. Names and settings may vary for different printers

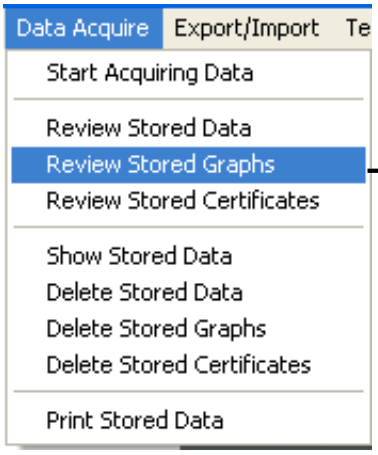


Printed Graphical Results



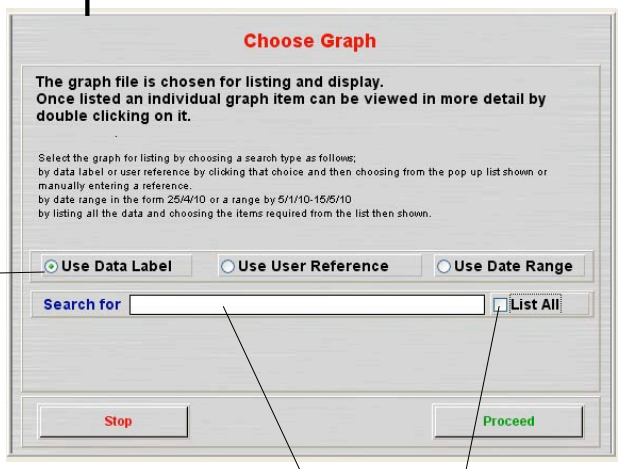
Once this is printed the user is returned to the Data Analysis screen

Review Stored Graphs



This routine allows currently stored graphs to reviewed. Note that these are stored under their data label name and several graphs can be stored from the same data label. If more than one match is found for the search initiated then the results are listed for choosing the correct one.

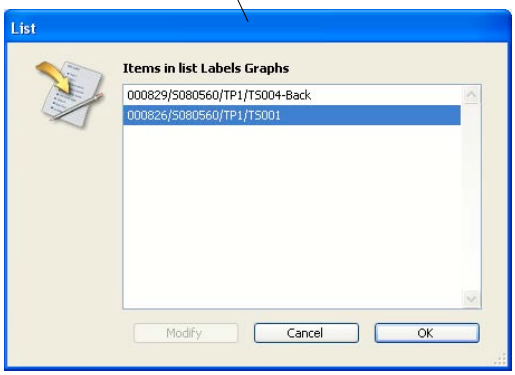
Use Data Label

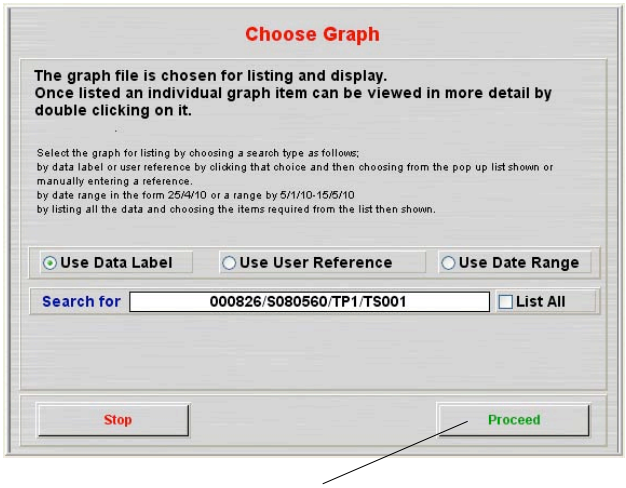


Choose the search type

Checking this box selects all the stored graphs

Click on the search type and the list of currently stored graphs Data Labels are shown. Click on the one required and then click OK to select this data label. Note that more than one graph may be stored for one label. The list is in reverse order so the most recent should be at the top. Clicking List All will show all stored Graphs.

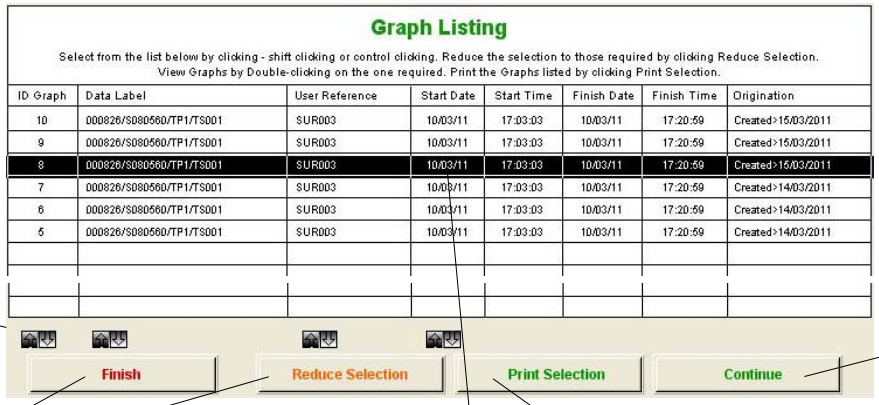




This Label is entered as the choice. Click confirm to proceed or click on the Search For entry point to choose again.

Stored Graph Listing

The stored graphs are then listed. The graphs are listed whether one is found or many.



These sort the column above them up or down

This completes this routine

This completes this routine

This reduces the selection to only the graphs chosen. Highlight those required by clicking, shift clicking or control clicking before clicking this button.

This prints all the graphs listed above after showing the Print Settings screens. Note that all the listed graphs will be printed if you do not select the one or ones required and then click Reduce Selection. You need to reduce the listed selection to ONLY the graphs you wish to print.

Double clicking on any listed Graph displays it in full

Graph Results Display

This saves changes to the graph and returns to the Stored Graph Listing

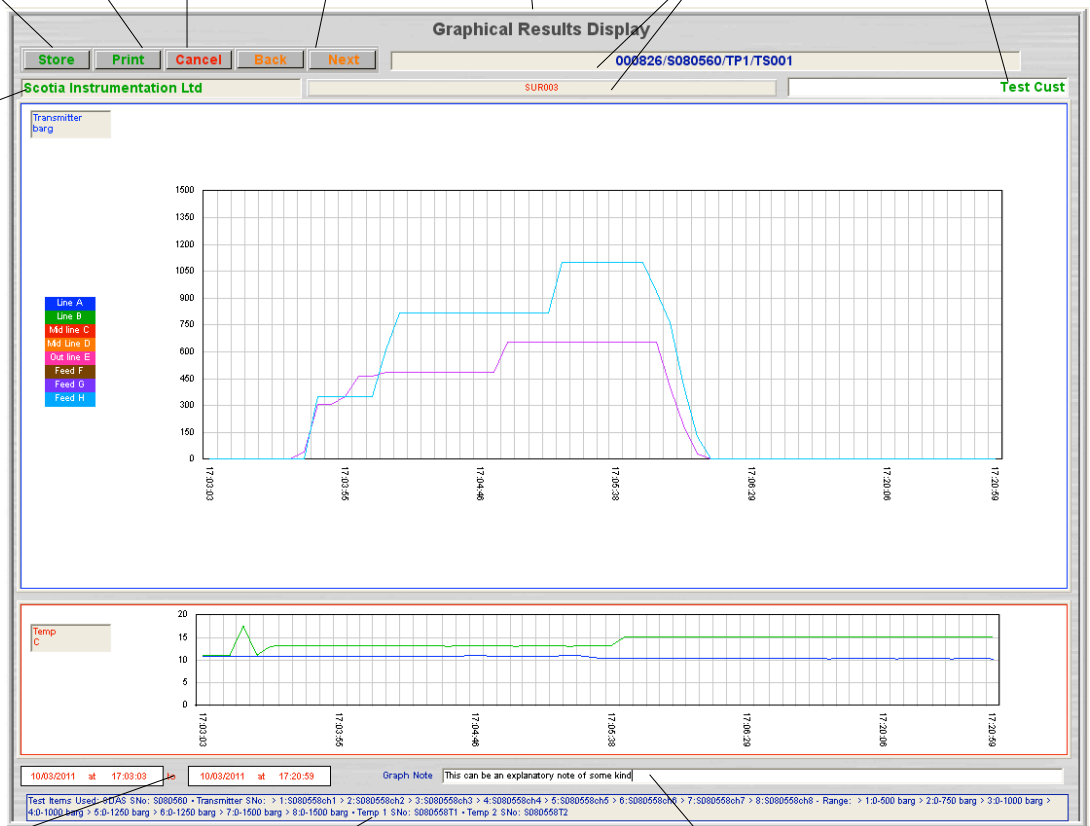
This prints the graph and saves changes to the graph and returns to the Stored Graph Listing

This returns to the Stored Graph Listing without saving any changes

These move through the list of graph captures. They only display if the move is possible

These are the data references for this graph

If the customer name has been saved with the Graph capture it appears here. It can be entered or altered here.



If the user company name has been saved with the Graph capture it appears here

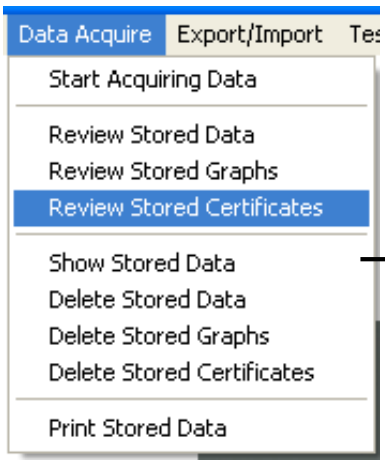
In order to hold the text proportions of the picture of these graphs the graphs are sized proportionately and may not fill the available space on the screen

This shows the range of the graph with date and time

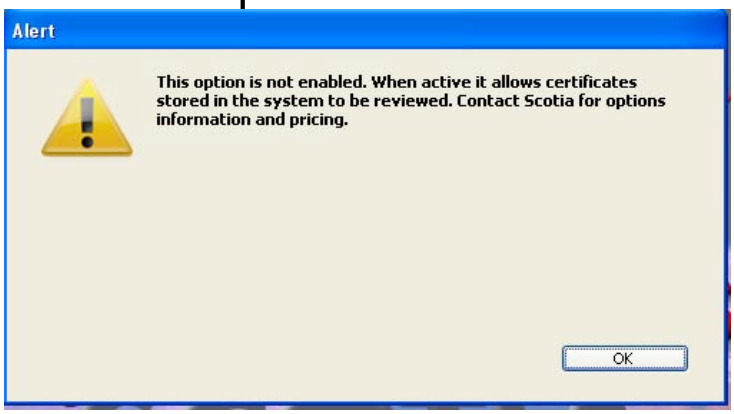
This is the equipment used for this test, SDAS serial number, transmitter serial numbers and ranges and the serial numbers of the temperature probes

This gives an 80 character field which can be used to clarify why this graph is being saved or some other note

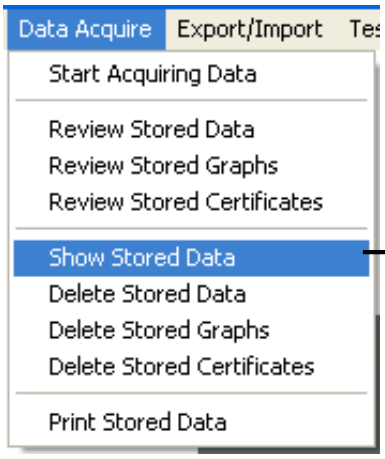
Review Stored Certificates



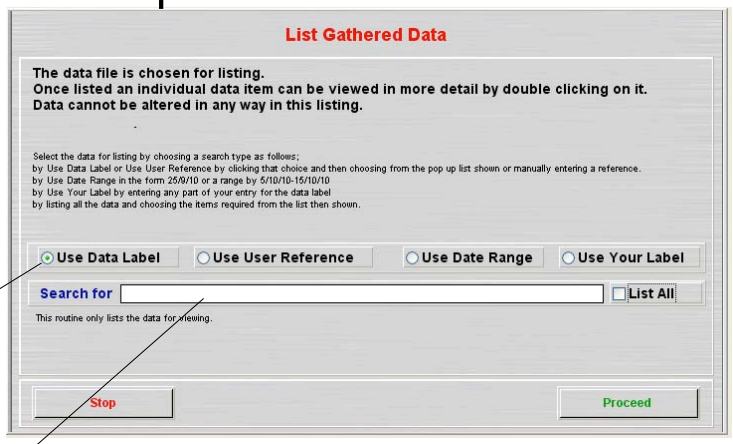
This option allows the creation of a certificate for a test. This is covered in the options section of this manual. If this is not enabled then this alert screen appears.



Show Stored Data

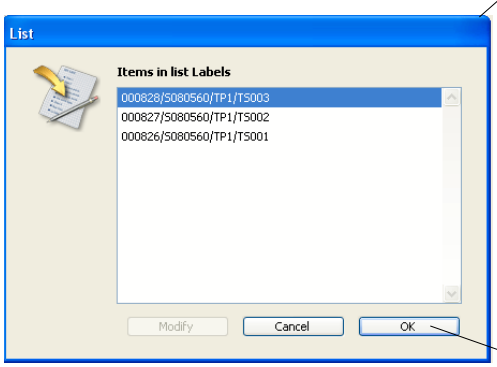


This routine allows currently stored data values to reviewed.



Choose the search type

Click on the search type or the Search for entry to show this pick list if you have chosen the Use Data Label



Choosing to search by User Reference, Data Range or Your Label will show all the matching data events for that search. This can involve several Data Labels' data. Checking the List All box will show all the stored data.

If the number of data items exceed the limit for displaying - default is 10,000 - then the data must be displayed either in blocks of 10,000 or by sampling the data to the limit of 10,000. The user is asked to choose which if this is the case.

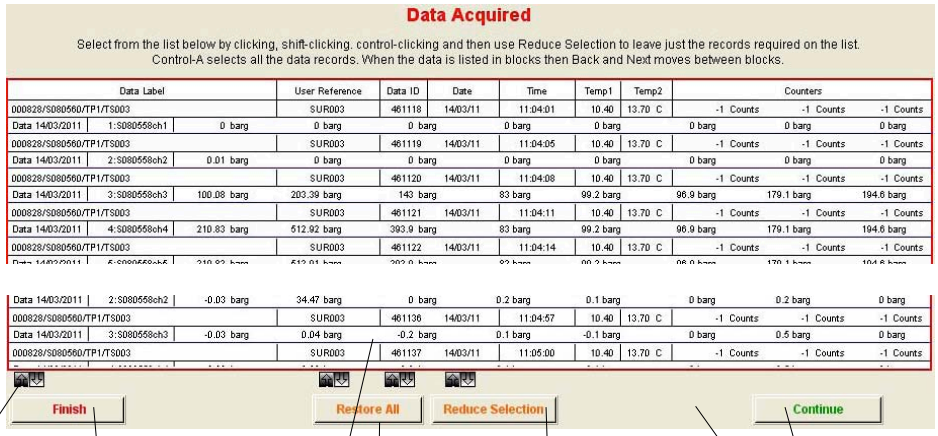
Click on the one required and then click OK to select this choice.

Click Stop to return to the start screen

Click Proceed to show the selected data

Listing of Data Acquired

The stored data items are then listed.



These sort the column above them up or down

This completes this routine

This returns the listing to the original list if Reduce Selection has been used.

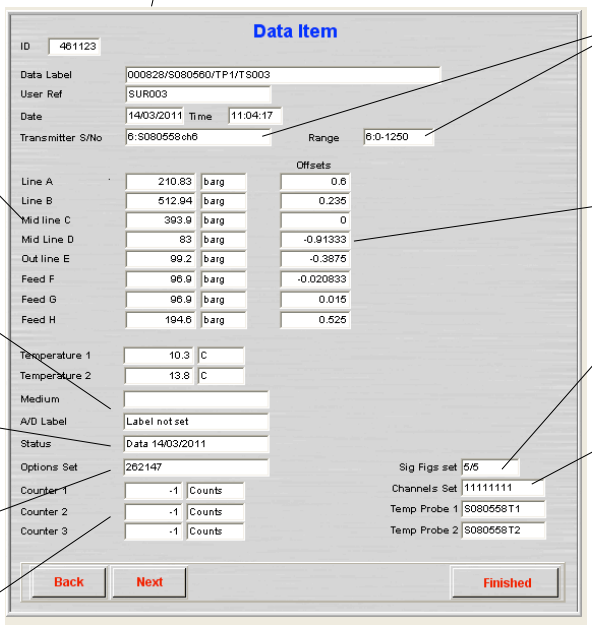
This reduces the selection to only those selected. Select by clicking - shift clicking or control clicking

This completes this routine

If the data has been segmented to display in 10,000 blocks then next and back buttons appear here to allow moving between blocks

Double clicking on a listed item shows more detail. Note that data cannot be altered in any way.

The appearance of this screen may change with different SDAS options



The labeling of each data field shows the type of data

The serial number and range of the 8 transmitters of the channels are stored successively in each data item. The channel number is shown before each.

The labels set by the user at the start of logging a test are shown here

The zero offset at the start of this test are shown here for each channel

Medium and A/D Label are used with other options

If the option for significant figures is active then any change to default is stored here

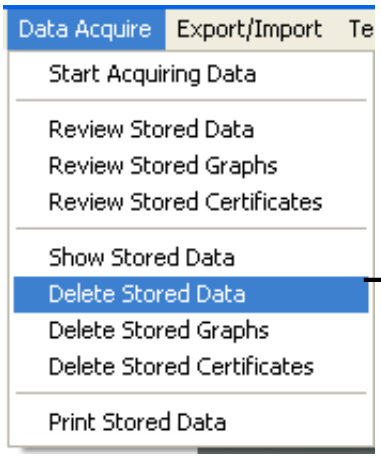
Imported data status is labelled differently from gathered data

This shows the channel settings 1 is on and 2 and 3 are disabled

This is the code for the options set for this data set

If counters are active their values show here. -1 is counter off

Delete Stored Data



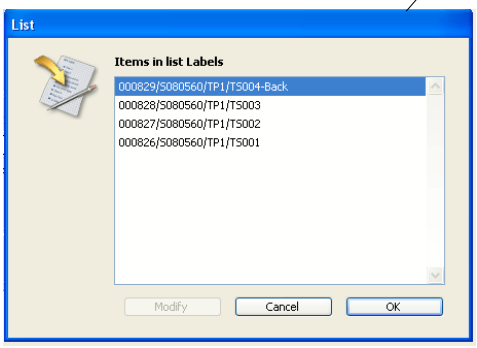
This routine deletes data from the SDAS. Access to this routine is restricted and normal users will get this screen when they choose this menu item.

For users with a level access which enables them to proceed this screen is shown

Checking this box selects all the stored data

Choose the search type

Click on the search type or the Search for entry to show this pick list if you have chosen the Use Data Label



Choosing to search by User Reference, Data Range or Your Label will show all the matching data events for that search. This can involve several Data Labels' data. Checking the List All box will show all the stored data.

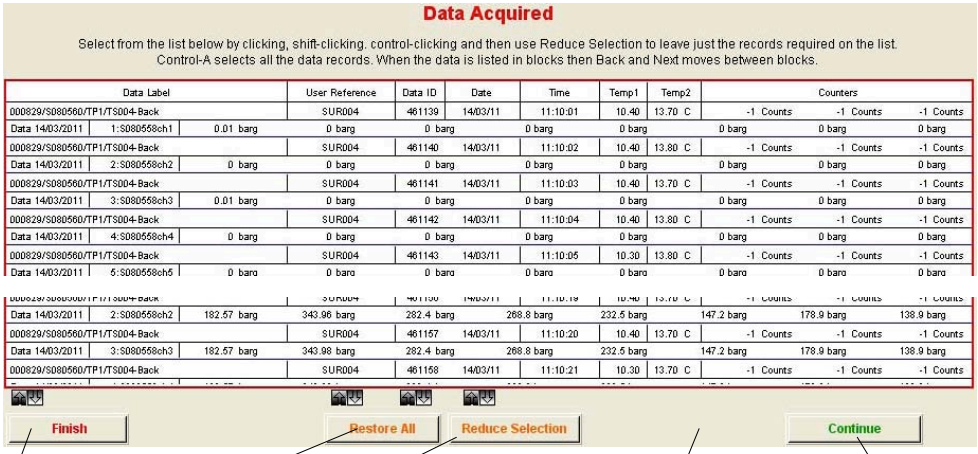
If the number of data items exceed the limit for displaying - default is 10,000 - then the data must be displayed either in blocks of 10,000 or by sampling the data to the limit of 10,000. The function of this routine - to delete all the found data - is not affected by this as it will delete all the data chosen not just those displayed.

Choose from the list presented and click OK to proceed.

This Label is entered as the choice. Click confirm to proceed or click on the Search for entry point to choose again.

Listing of Data for Deletion

The stored data items are then listed.



This completes this routine without deleting

This returns the listing to the original list.

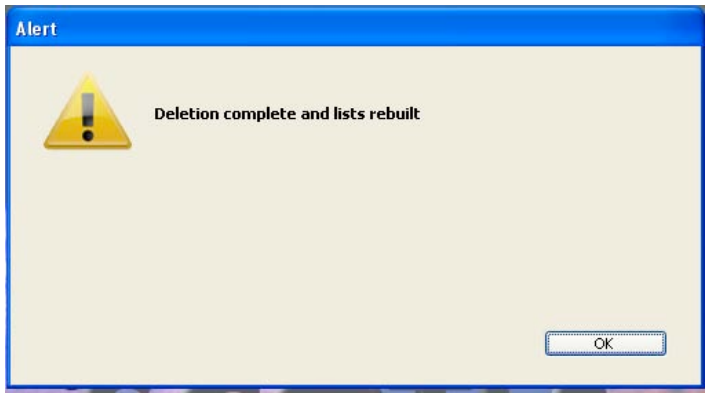
This reduces the selection to only those selected. Select by clicking - shift clicking or control clicking. Only those finally listed will be deleted.

If the data has been segmented to display in 10,000 blocks then next and back buttons appear to allow moving between blocks

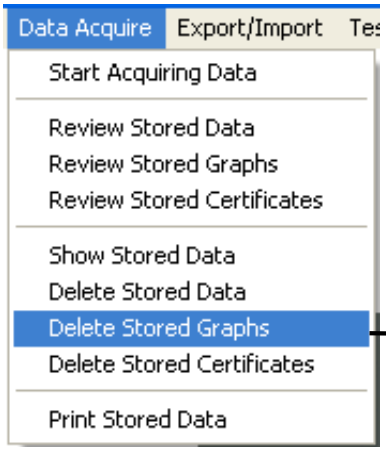
This proceeds with this selection to deletion

The user is asked to confirm this action

If OK clicked then the deletion routine proceeds and the following screen confirms completion

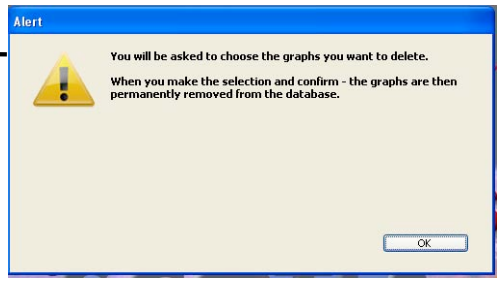


Delete Stored Graphs

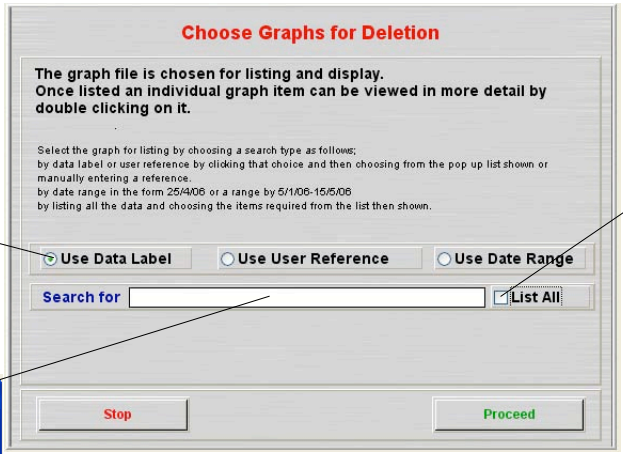


This routine deletes data from the SDAS. Access to this routine is restricted and normal users will get this screen when they choose this menu item.

For users with a level access which enables them to proceed this screen is shown



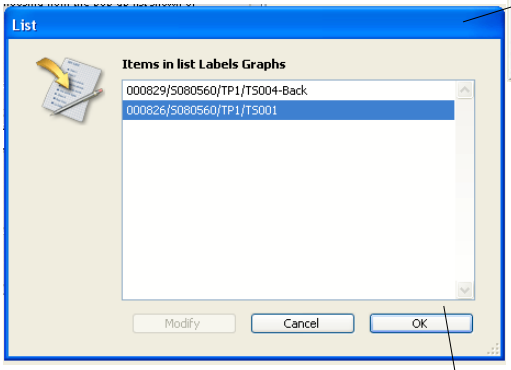
Click on the search type and the list of currently stored graphs data or user labels are listed. Click on the one required and then click OK to select this data label. Note that more than one graph may be stored for one label. Choosing Date Range allows entry of a date in the form 14/5/06 or a range of dates as 14/5/06-16/5/06. Clicking List All will show all stored Graphs.



Choose the search type

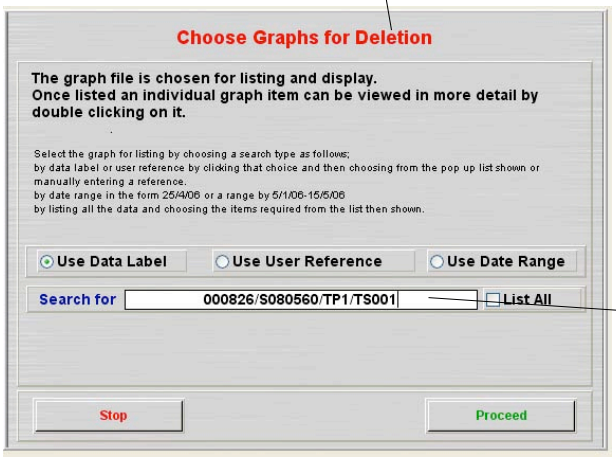
Checking this box selects all the stored data

Click on the search type or the Search for entry to show this pick list if you have chosen the Use Data Label



Choosing to search by User Reference, or Data Range will show all the matching data events for that search. This can involve several Data Labels' data. Checking the List All box will show all the saved Graphs.

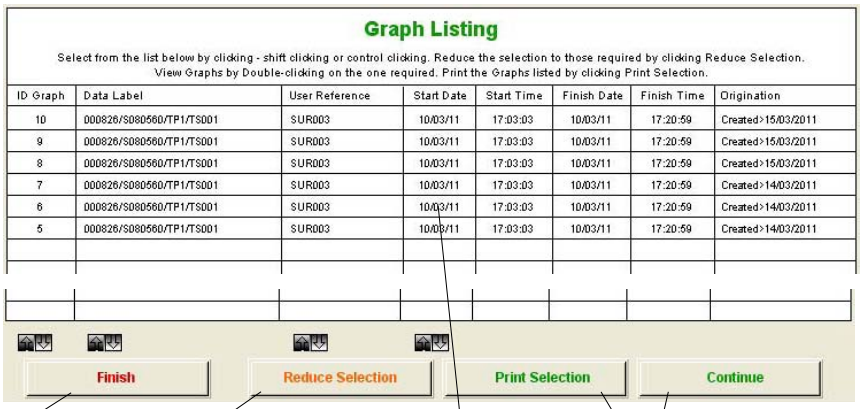
Choose from the list presented and click OK to proceed.



This Label is entered as the choice. Click confirm to proceed or click on the Search for entry point to choose again.

Listing of Graphs for Deletion

The stored graphs are then listed.



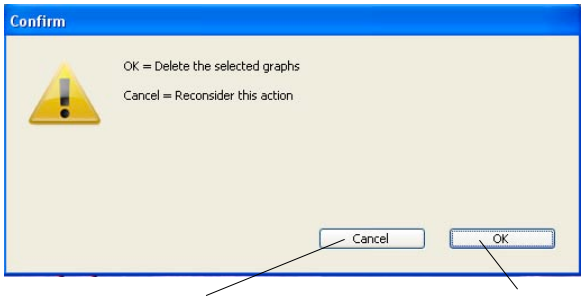
This completes this routine without deleting

This reduces the selection to only the graphs chosen. Highlight those required by clicking, shift clicking or control clicking

Double click to see the graph detail

These proceed to delete all the graphs listed above

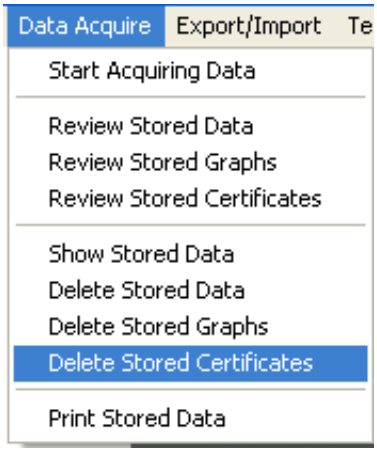
You get one final chance to stop the deletion.



The graphs are not deleted

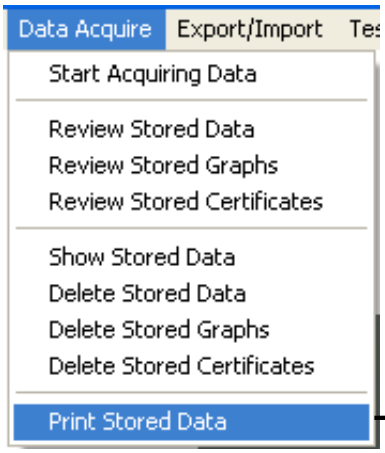
No more chances after this. The graphs are gone.

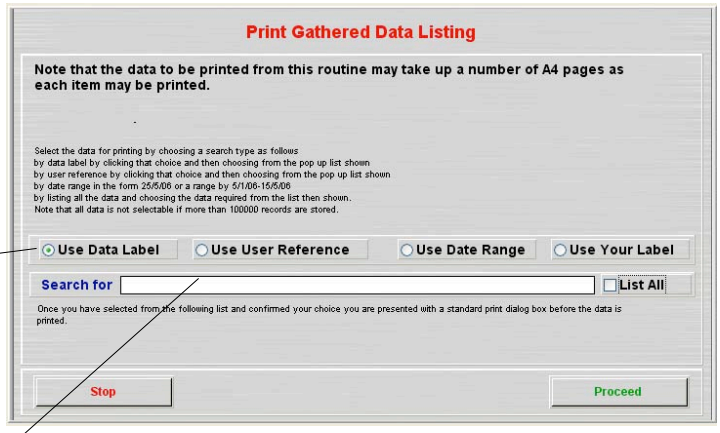
Delete Stored Certificates



When this option is active this allows deleting of a created test certificate.

Print Stored Data





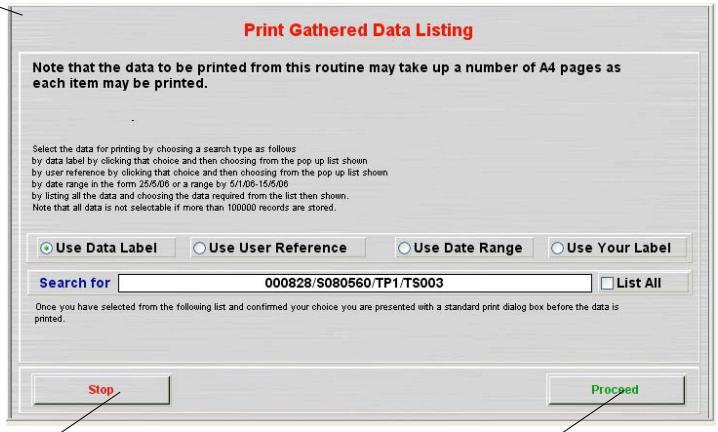
Choose the search type

Click on the search type or the Search for entry to show this pick list if you have chosen the Use Data Label

Choosing to search by User Reference, Data Range or Your Label will show all the matching data events for that search. This can involve several Data Labels' data. Checking the List All box will show all the stored data.

If the number of data items exceed the limit for displaying - default is 10,000 - then the data must be displayed either in blocks of 10,000 or by sampling the data to the limit of 10,000. The user is asked to choose which if this is the case.

Click on the one required and then click OK to select this choice.

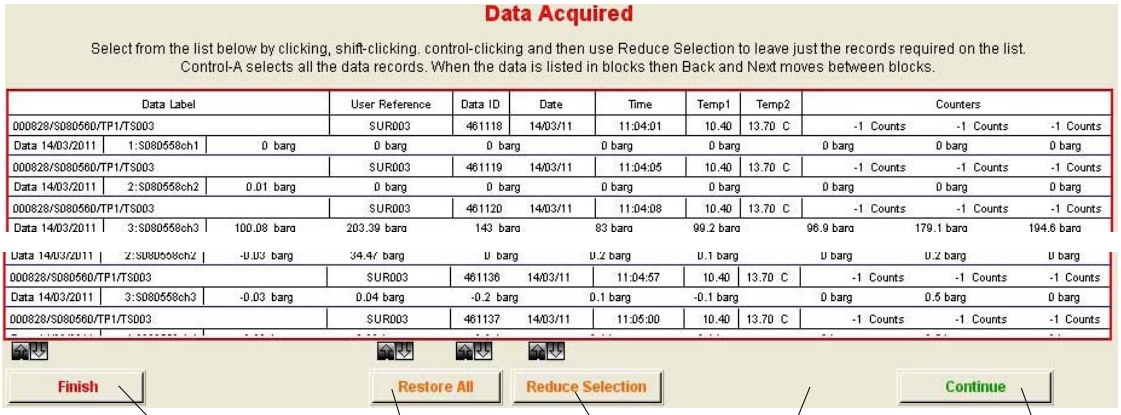


Click Stop to return to the start screen

Click Proceed to show the selected data

Listing of Data for Printing

The stored data items are then listed.



This completes this routine

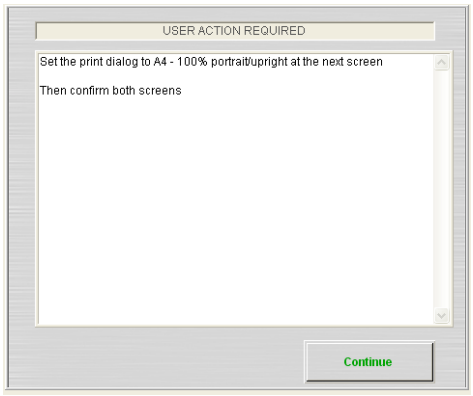
This returns the listing to the original list.

This reduces the selection to only those selected. Select by clicking - shift clicking or control clicking

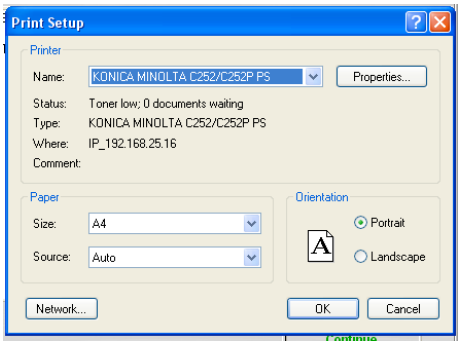
If the data has been segmented to display in 10,000 blocks then next and back buttons appear to allow moving between blocks

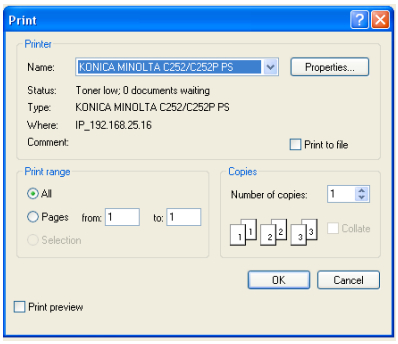
This proceeds with this selection to printing

Double clicking on a listed item shows more detail.



An information screen then appears advising the paper size as A4 and orientation as portrait or upright for the next screens





Set the values on the print settings screens and confirm both. Names and settings may vary for different printers

The print format is similar to this. Note that printing out the data may use a lot of paper.

Acquired Data Listing

Data Label			Date	Time	ID	Temperature
000828/S080560/TP1/TS003			14/03/2011	11:04:01	461118	10.40 | 13.70 C
Data 14/03/2011	SUR003		1 / 5	2 / 6	5 / 7	4 / 8
Counters 1 2 3		1:S080558ch1	0 barg	0 barg	0 barg	0 barg
-1 Counts	-1 Counts	-1 Counts	0 barg	0 barg	0 barg	0 barg
000828/S080560/TP1/TS003			14/03/2011	11:04:05	461119	10.40 | 13.70 C
Data 14/03/2011	SUR003		1 / 5	2 / 6	5 / 7	4 / 8
Counters 1 2 3		2:S080558ch2	0.01 barg	0 barg	0 barg	0 barg
-1 Counts	-1 Counts	-1 Counts	0 barg	0 barg	0 barg	0 barg
000828/S080560/TP1/TS003			14/03/2011	11:04:08	461120	10.40 | 13.70 C
Data 14/03/2011	SUR003		1 / 5	2 / 6	5 / 7	4 / 8
Counters 1 2 3		3:S080558ch3	100.08 barg	203.39 barg	143 barg	83 barg
-1 Counts	-1 Counts	-1 Counts	99.2 barg	99.2 barg	99.2 barg	99.2 barg
000828/S080560/TP1/TS003			14/03/2011	11:04:11	461121	10.40 | 13.70 C
Data 14/03/2011	SUR003		1 / 5	2 / 6	5 / 7	4 / 8
Counters 1 2 3		4:S080558ch4	210.83 barg	512.92 barg	393.9 barg	83 barg
-1 Counts	-1 Counts	-1 Counts	99.2 barg	99.2 barg	99.2 barg	99.2 barg
000828/S080560/TP1/TS003			14/03/2011	11:04:14	461122	10.40 | 13.70 C
Data 14/03/2011	SUR003		1 / 5	2 / 6	5 / 7	4 / 8
Counters 1 2 3		5:S080558ch5	210.83 barg	512.91 barg	393.9 barg	83 barg
-1 Counts	-1 Counts	-1 Counts	99.2 barg	99.2 barg	99.2 barg	99.2 barg
000828/S080560/TP1/TS003			14/03/2011	11:04:17	461123	10.30 | 13.80 C
Data 14/03/2011	SUR003		1 / 5	2 / 6	5 / 7	4 / 8
Counters 1 2 3		6:S080558ch6	210.83 barg	512.94 barg	393.9 barg	83 barg
-1 Counts	-1 Counts	-1 Counts	99.2 barg	99.2 barg	99.2 barg	99.2 barg
000828/S080560/TP1/TS003			14/03/2011	11:04:20	461124	10.40 | 13.70 C
Data 14/03/2011	SUR003		1 / 5	2 / 6	5 / 7	4 / 8
Counters 1 2 3		7:S080558ch7	210.83 barg	512.95 barg	393.9 barg	83 barg
-1 Counts	-1 Counts	-1 Counts	99.2 barg	99.2 barg	99.2 barg	99.2 barg
000828/S080560/TP1/TS003			14/03/2011	11:04:23	461125	10.40 | 13.70 C
Data 14/03/2011	SUR003		1 / 5	2 / 6	5 / 7	4 / 8
Counters 1 2 3		8:S080558ch8	210.83 barg	512.96 barg	393.9 barg	83 barg
-1 Counts	-1 Counts	-1 Counts	99.2 barg	99.2 barg	99.2 barg	99.2 barg
000828/S080560/TP1/TS003			14/03/2011	11:04:26	461126	10.40 | 13.70 C
Data 14/03/2011	SUR003		1 / 5	2 / 6	5 / 7	4 / 8
Counters 1 2 3		1:S080558ch1	210.83 barg	512.95 barg	393.9 barg	83 barg
-1 Counts	-1 Counts	-1 Counts	99.2 barg	99.2 barg	99.2 barg	99.2 barg
000828/S080560/TP1/TS003			14/03/2011	11:04:29	461127	10.30 | 13.70 C
Data 14/03/2011	SUR003		1 / 5	2 / 6	5 / 7	4 / 8
Counters 1 2 3		2:S080558ch2	210.83 barg	512.95 barg	393.9 barg	83 barg
-1 Counts	-1 Counts	-1 Counts	99.2 barg	99.2 barg	99.2 barg	99.2 barg
000828/S080560/TP1/TS003			14/03/2011	11:04:32	461128	10.40 | 13.70 C
Data 14/03/2011	SUR003		1 / 5	2 / 6	5 / 7	4 / 8
Counters 1 2 3		3:S080558ch3	210.83 barg	512.92 barg	393.9 barg	83 barg
-1 Counts	-1 Counts	-1 Counts	99.2 barg	99.2 barg	99.2 barg	99.2 barg

Export/Import Menu

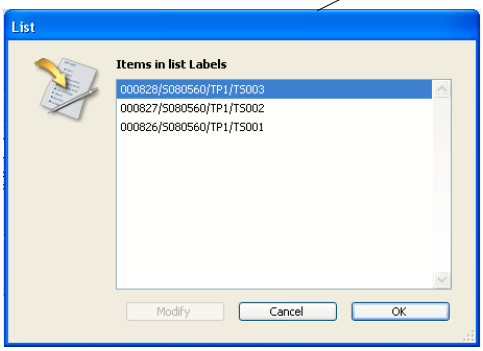
Export Secure Data File

Note that it is important that you label the saved data in a way that avoids confusing the files.

The data file exported by this routine is in a form that can only be read by the Import Secure Data File routine and cannot be viewed or changed by other programs. For the export of a normal text tab delineated file use 'Export Data as Text' menu item.

Choose the search type

Click on the search type or the Search for entry to show this pick list if you have chosen the Use Data Label



Click on the one required and then click OK to select this choice.

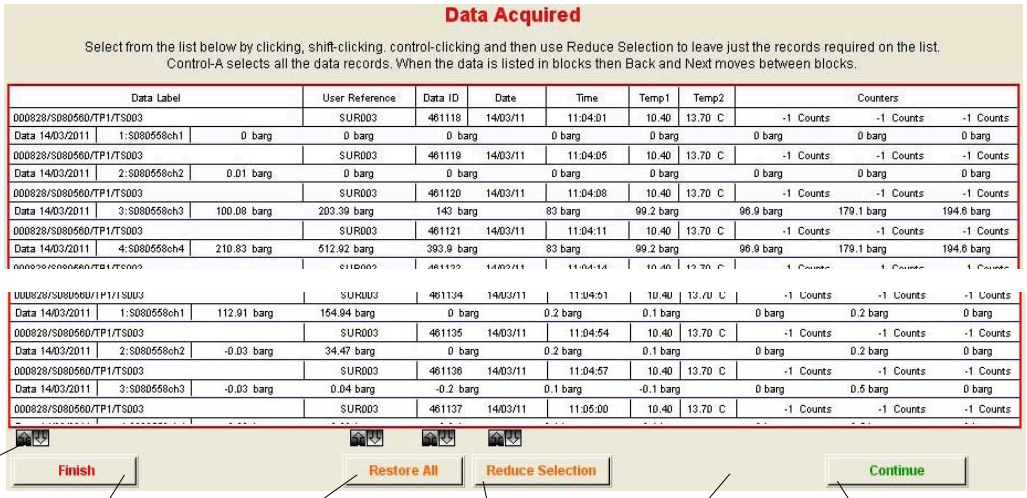
Choosing to search by User Reference, Data Range or Your Label will show all the matching data events for that search. This can involve several Data Labels' data. Checking the List All box will show all the stored data.

If the number of data items exceed the limit for displaying - default is 10,000 - then the data must be displayed either in blocks of 10,000 or by sampling the data to the limit of 10,000. The user is asked to choose which if this is the case. The limit is for display ONLY. All of the data will be exported.

Click Stop to return to the start screen

Click Proceed to show the selected data

The stored data items are then listed.



These sort the column above them up or down

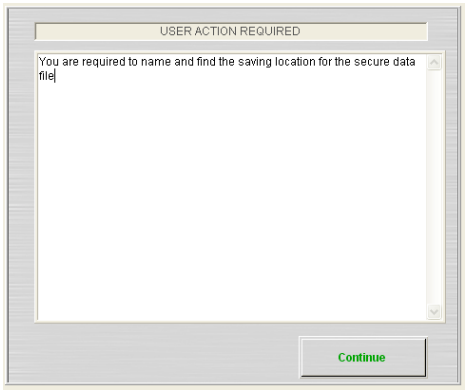
This exits this routine without export

This returns the listing to the original list.

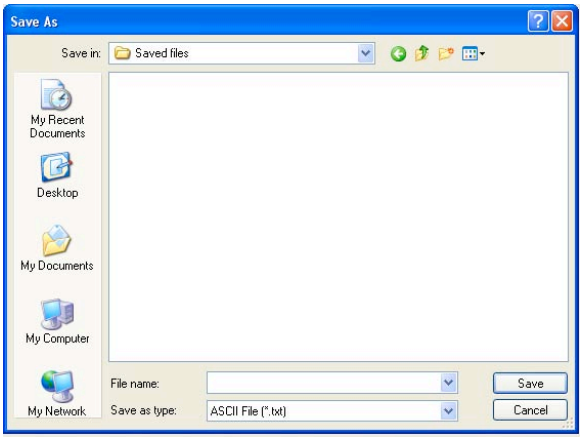
This reduces the selection to only those selected. Select by clicking - shift clicking or control clicking

If the data has been segmented to display in 10,000 blocks then next and back buttons appear to allow moving between blocks

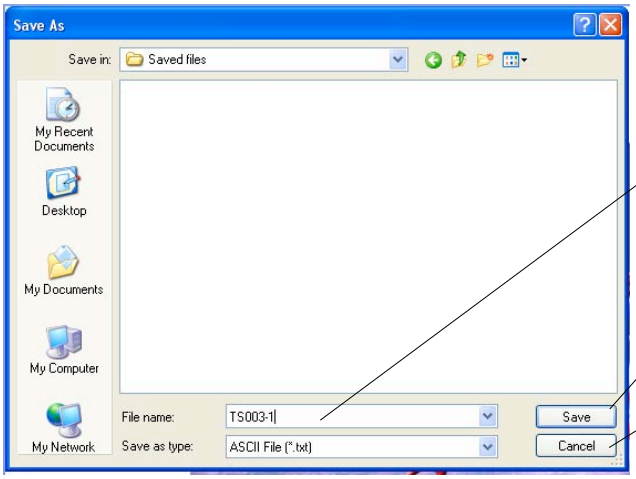
This proceeds with this selection to export



The standard Information dialogue box informs you that you are required to identify the saving location.



You must navigate to the saving location using the standard system



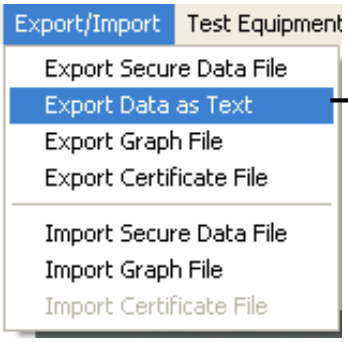
Enter a meaningful File name

Click Save to complete the export

Click Cancel to stop this routine

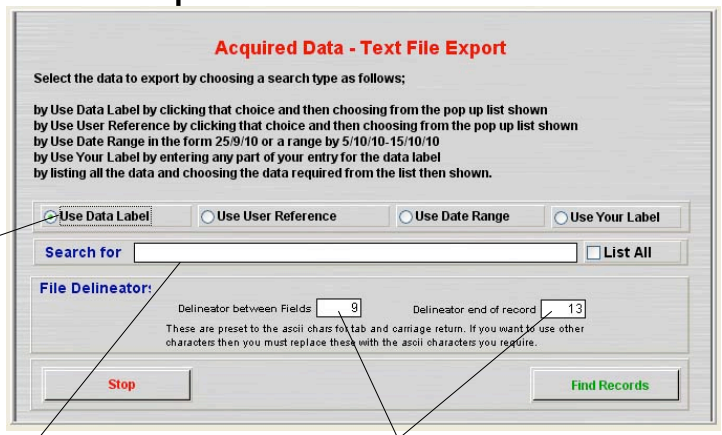
This screen appears to indicate that export has completed

Export Data as Text



Note that it is important that you label the saved data in a way that avoids confusing the files.

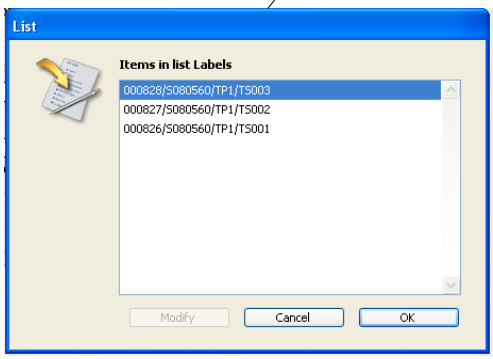
The data file exported by this routine is in a form that can only be read into spreadsheets or word processors. It cannot be read into SDAS Review software from its text format. Use Export Secure Data File routine for that purpose.



Choose the search type

These allow the user to alter the value of the data delineators - the characters that appear between items and at the end of each record

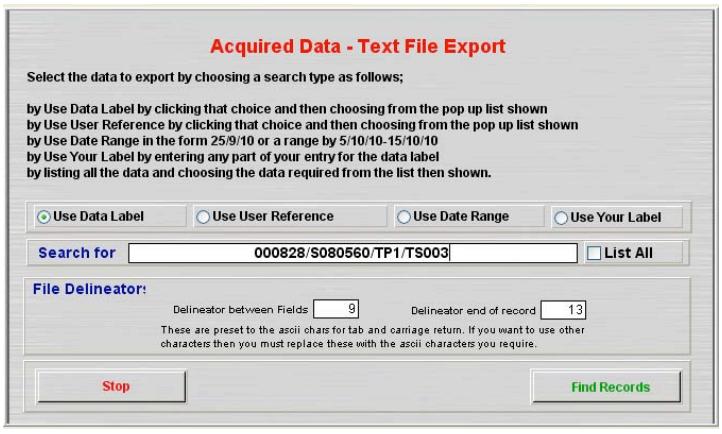
Click on the search type or the Search for entry to show this pick list if you have chosen the Use Data Label



Choosing to search by User Reference, Data Range or Your Label will show all the matching data events for that search. This can involve several Data Labels' data. Checking the List All box will show all the stored data.

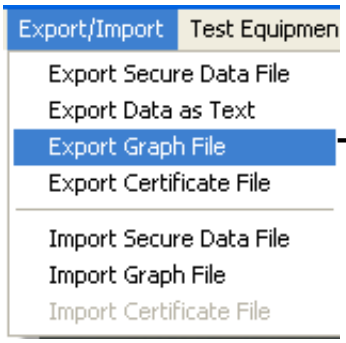
If the number of data items exceed the limit for displaying - default is 10,000 - then the data must be displayed either in blocks of 10,000 or by sampling the data to the limit of 10,000. The user is asked to choose which if this is the case. The limit is for display ONLY. All of the data will be exported.

Click on the one required and then click OK to select this choice.



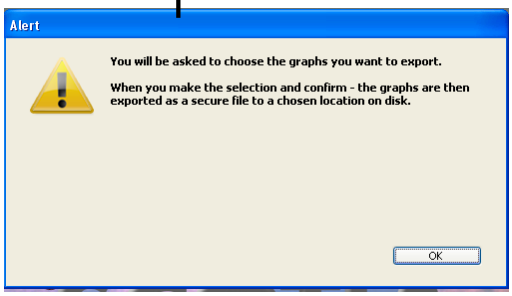
The rest of this routine is the same as Export Secure Data File

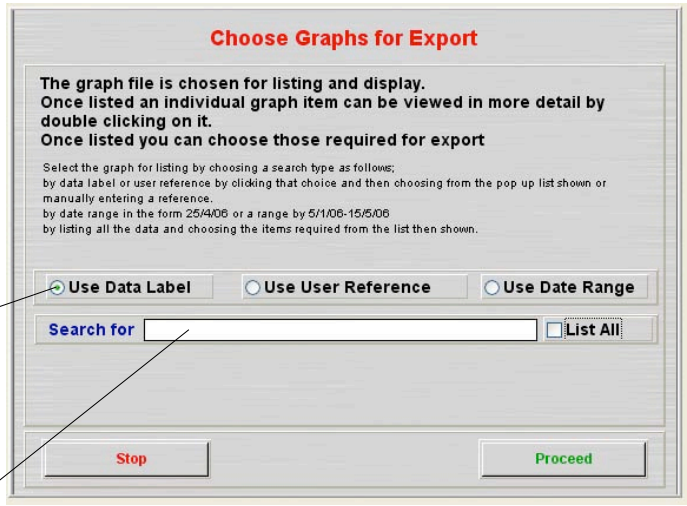
Export Graph File



Note that it is important that you label the saved data in a way that avoids confusing the files.

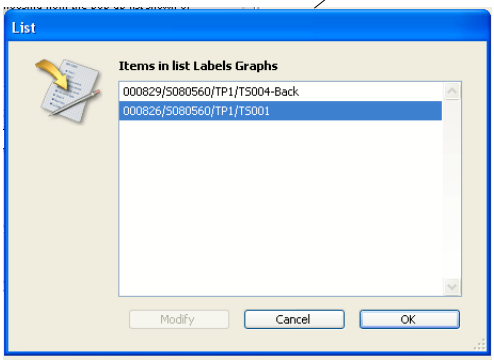
The graph data file exported by this routine is in a form that can only be read by the SDAS Import Graph File routine and cannot be viewed or changed by other programs. The graph file cannot be exported as text.





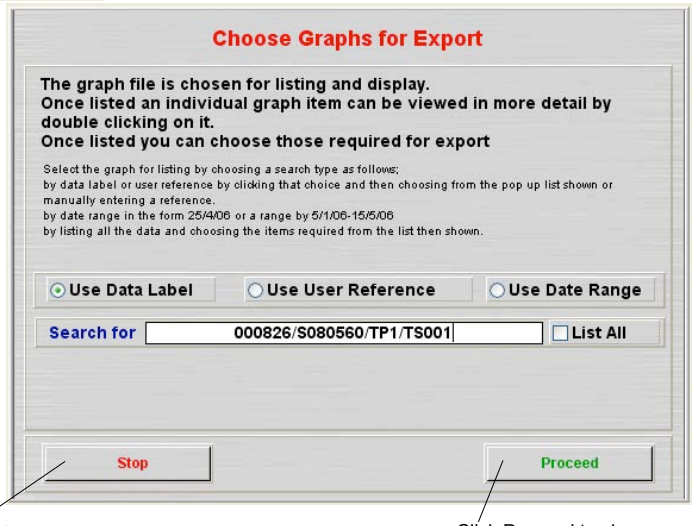
Choose the search type

Click on the search type or the Search for entry to show this pick list if you have chosen the Use Data Label



Choosing to search by User Reference, Data Range or Your Label will show all the matching data events for that search. This can involve several Data Labels' data. Checking the List All box will show all the stored graphs.

Click on the one required and then click OK to select this choice.

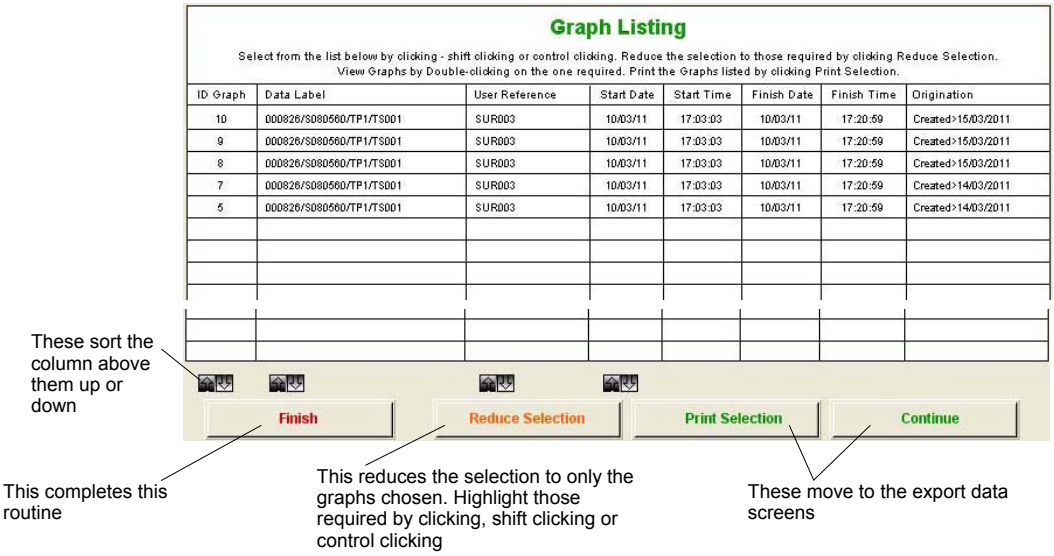


Click Stop to return to the start screen

Click Proceed to show the selected data

Stored Graph Listing

The stored graphs are then listed. The graphs are listed whether there is one found or many.



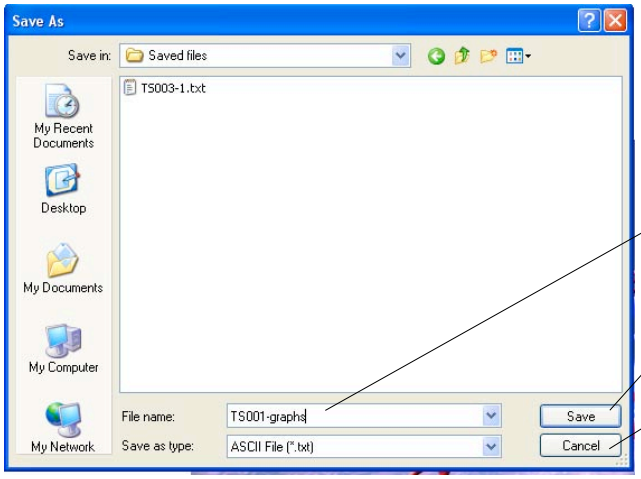
These sort the column above them up or down

This completes this routine

This reduces the selection to only the graphs chosen. Highlight those required by clicking, shift clicking or control clicking

These move to the export data screens

The routine will export all the graphs listed above after showing the export data screens. Note that all the listed graphs will be saved if you do not select the one or ones required and then click Reduce Selection. You need to reduce the listed selection to ONLY the graphs you wish to export.



You must navigate to the saving location using the standard system

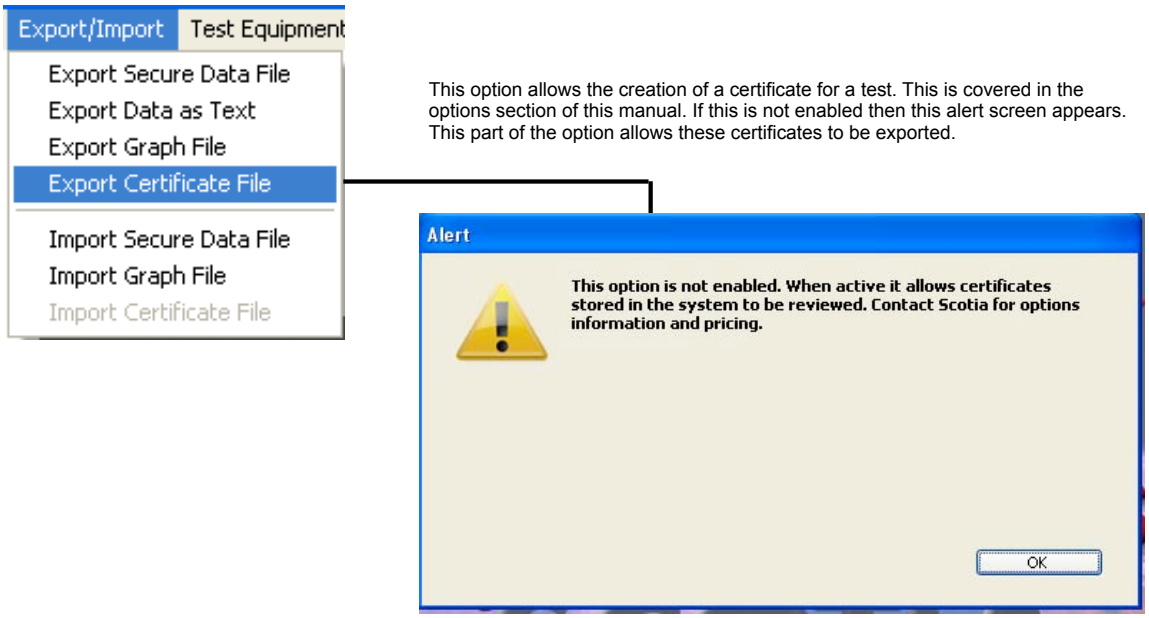
Enter a meaningful File name

Click Save to complete the export

Click Cancel to stop this routine

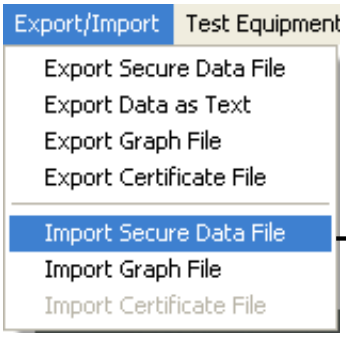
This screen appears to indicate that export has completed

Export Certificates File



This option allows the creation of a certificate for a test. This is covered in the options section of this manual. If this is not enabled then this alert screen appears. This part of the option allows these certificates to be exported.

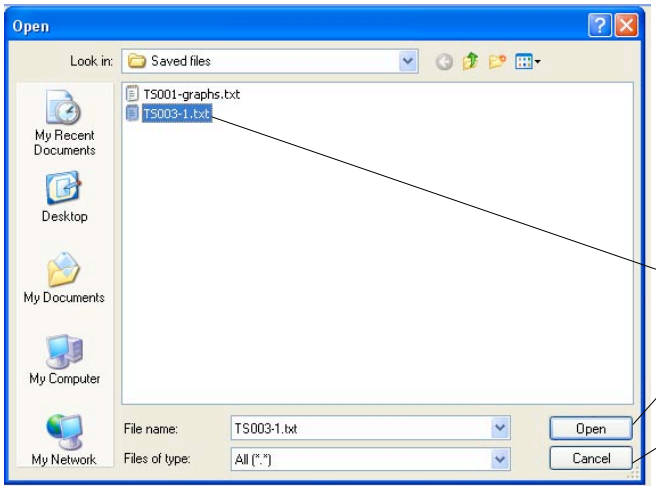
Import Secure Data File



The data file imported by this routine is in a form that can only be read by the Import Secure Data File routine. Imported data is labelled as 'Imported' followed by the import date to distinguish it from gathered data.

The standard import dialogue box appears to allow you to navigate to the location and find the file to be loaded. You must have a naming system that will ensure that you import the correct file. If the file header is incorrect the import will terminate.

The standard import dialog is shown for you to navigate the file location



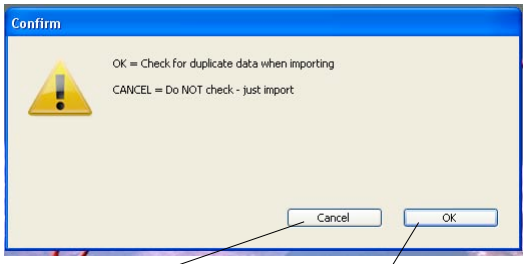
The naming system for exporting these files is important as there is nothing else to help you with selecting the correct file

Select the file by clicking on it

Click Open to import this file

Click Cancel to stop this routine

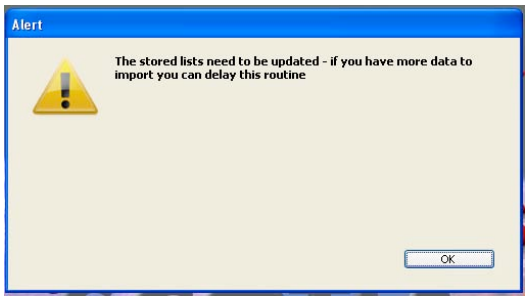
It is possible to import the same file twice either entirely or partly. The system checks the type of file at import and if the file is not marked as a data file then importing is terminated. You can select to check for duplicates or not at import. If checking is on then any duplicates will be advised and the user is asked to decide to import or not. It may be that you know you have overlapped your export data by a few records so this routine will allow you to skip these and continue when the data is not being duplicated.

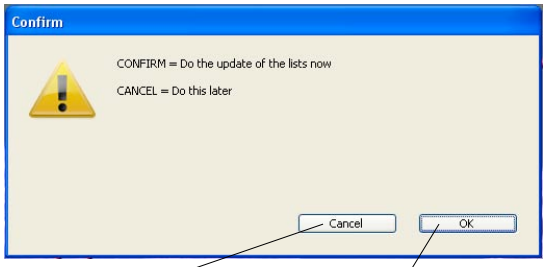


Click Cancel to import without checking

Click OK to check for duplicates on import

The data choice lists need to be updated to reflect the new data in the files. In large databases this may take some time to rebuild so the option is given to delay this if you have other imports to do. You must do this at the end however otherwise the imported data will not appear in the pick lists.

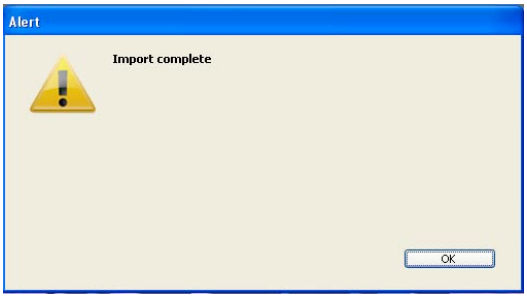




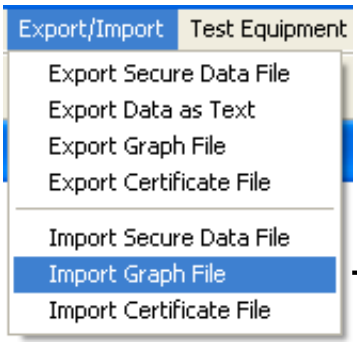
Click Cancel to skip this just now

Click OK to proceed to do the list update

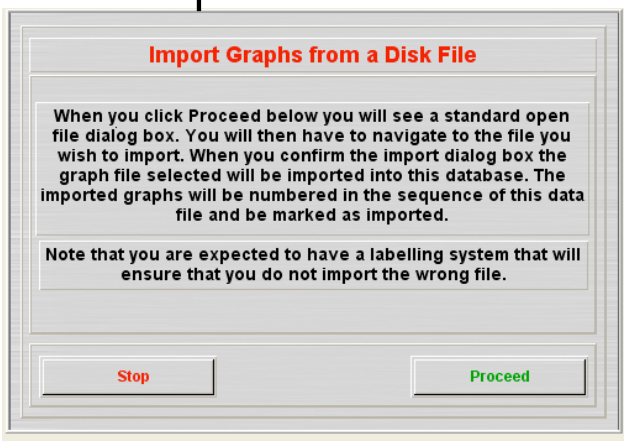
If the import is successful then these screens appear to indicate that import has completed



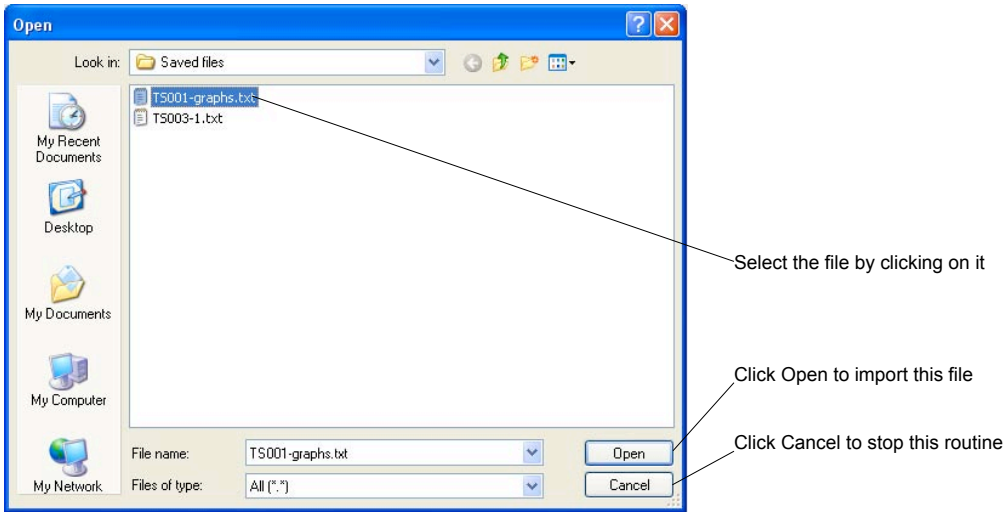
Import Graph File



The graph data file imported by this routine is in a form that can only be read by the Import Graph File routine. Imported files are marked as Imported with the import date.



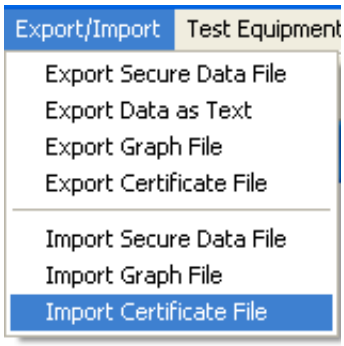
The standard import dialogue box appears to allow you to navigate to the location and name the file being loaded. You must have a naming system that will ensure that you import the correct file. If the file header is incorrect the import will terminate.



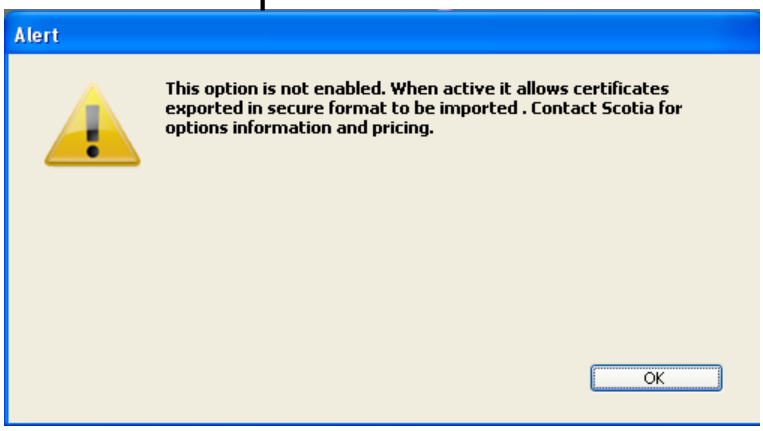
No duplicate check is applied to this import as there is no impact on generated displays.

This screen appears to indicate that import has completed

Import Certificates File



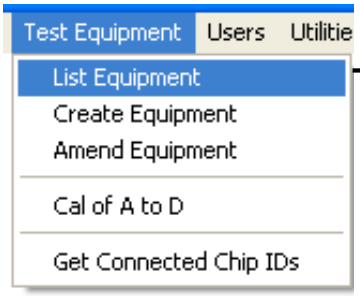
This option allows the creation of a certificate for a test. This is covered in the options section of this manual. If this is not enabled then this alert screen appears. This part of the option allows these certificates to be imported.



Test Equipment Menu

All transmitters used must be registered in the Equipment file. In Server based systems the SDAS device must also be registered in this file.

List Equipment



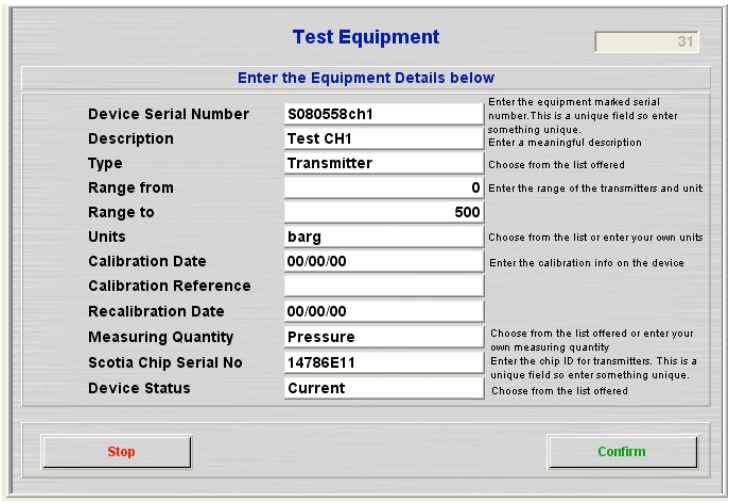
This allows items of equipment in the database system to be viewed.

The list can be sorted ascending or descending by column by clicking the up or down arrow

Double click on the item to be see more detail

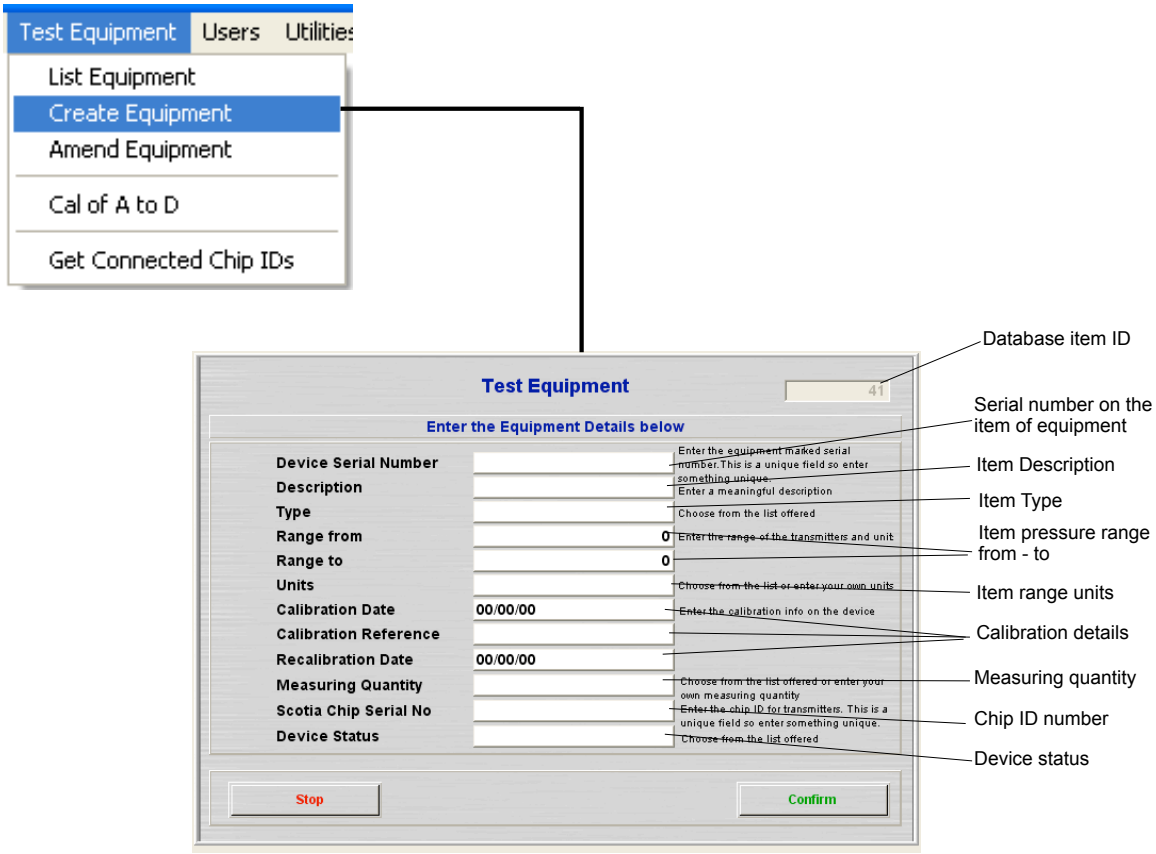
The list can be reduced to those selected by clicking the Reduce Selection

This ends this routine



The items are labelled to indicate their meaning. The calibration detail can be used to store the traceable references for the device.

Create Equipment



The serial number should be that marked on the transmitter. This entry is unique and any duplication will not be accepted.

The Description should be that of the transmitter - manufacturer, model etc.

Item type has to be chosen from the pop-up list that appears. Note: only items with type ‘transmitter’ will appear in the list of test equipment for choosing a transmitter.

Item pressure range. This MUST be the calibrated range of the transmitter. The SDAS unit will assume that when 4 mA is being read that the transmitter is at the lower value of the scale entered and that when 20 mA is being read that the transmitter is at full scale. Failure to comply with this will compromise the operation of the SDAS.

Units MUST be the units of the transmitter calibrated range.

Calibration Date, reference, and Recalibration date are optional. An additional module to the SDAS system can control this information warning the user of calibration becoming due etc.

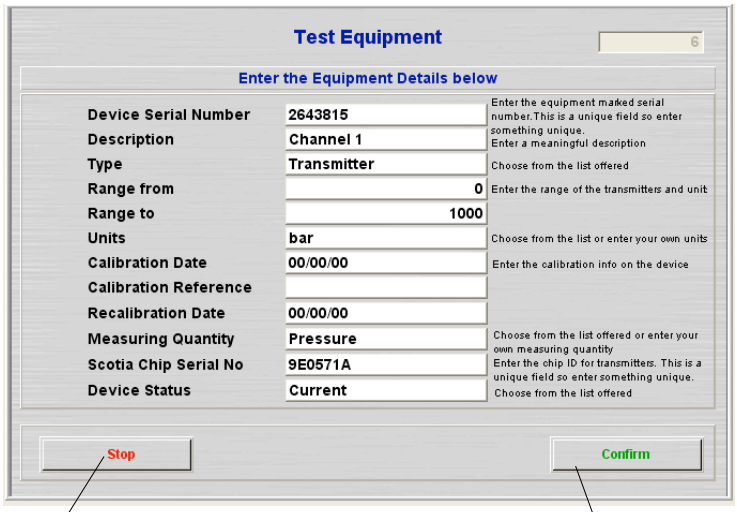
Measuring quantity is the physical property being measured by the transmitter e.g. pressure. This can be chosen from the pop-up list or entered manually.

Chip ID number is the chip fitted to the transmitter. This must be correct for the transmitter to be used in the SDAS. Any detected chip that is not included in this file will not be accepted for use by the SDAS system until it has been entered in this file.

If no chip has been fitted to the transmitter then enter the item serial number. Do not leave this entry blank. This entry is unique and any duplication will not be accepted.

Device status is the current status of the transmitter. Only ‘current’ items will be included in any pop-up list.

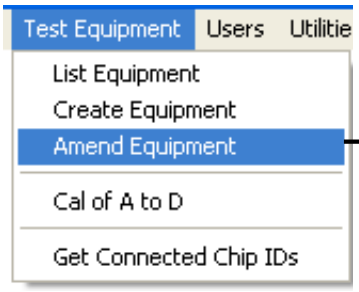
Filled with sample data



Do not add this item

Add this item to the database and pop-up lists

Amend Equipment



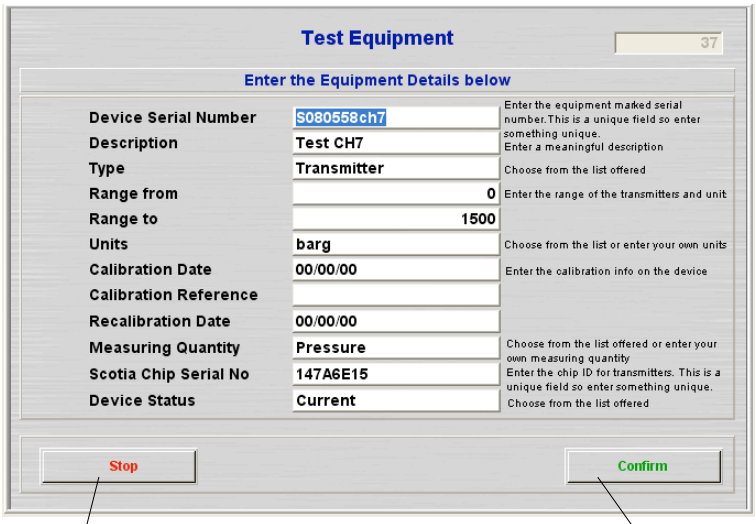
This allows items of equipment to be amended in the database system. These amendments then update the transmitter pick list used when starting a test.

The list can be sorted ascending or descending by column by clicking the up or down arrow

Double click on the item to be see more detail

The list can be reduced to those selected by clicking the Reduce Selection

This ends this routine



This resets any changes made to this item

This confirms any changes

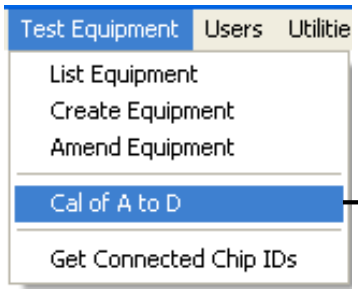
Cal of A to D

NOTE THAT CONFIRMING THAT YOU HAVE THE VALUE APPLIED IN THE FOLLOWING SCREENS WHEN YOU DO NOT WILL RENDER THE OPERATION OF THE SDAS INSTRUMENT INACCURATE UNTIL YOU DO THE CALIBRATION PROPERLY. IF A CALIBRATION FAILED MESSAGE IS GIVEN AT THE END THEN YOU SHOULD NOT USE THE SDAS UNTIL AN ACCEPTABLE CALIBRATION IS DONE. ACCESS TO THIS MENU ITEM SHOULD BE SEVERELY RESTRICTED.

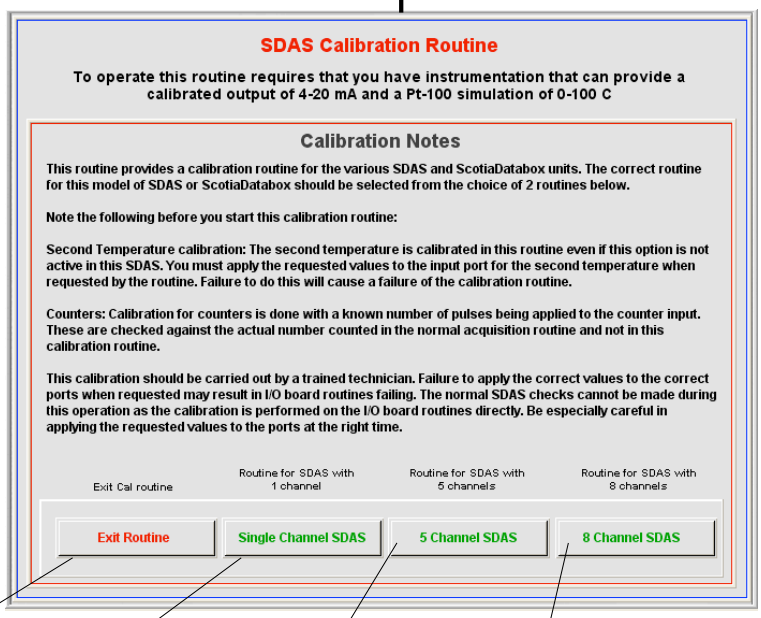
The routine below shows the calibration routine for a 2011 model SDAS or ScotiaDatabox using 5033 version software. The routine below is for the 8-channel model. If you have one with fewer channels then choose the routine that matches the number of channels fitted to the SDAS. You must calibrate all the channels fitted even if you use fewer than the full number available.

Note also that you must perform the calibration of both temperature inputs.

Be prepared to do this before you start this routine. Stopping the routine and aborting may result in a partial calibration.



This routine calibrates the A to D device that reads the current flowing in the transmitter and calibrates the component that measures the pt-100 probes output. Note: Like any instrument the calibration is vital to its correct operation so this routine should only be performed by a technician skilled at calibrating instruments and who is using traceable equipment capable of simulating a 4-20mA transmitter and a Pt-100 probe. Failure to calibrate correctly may render the SDAS inoperable.



This exits the routine

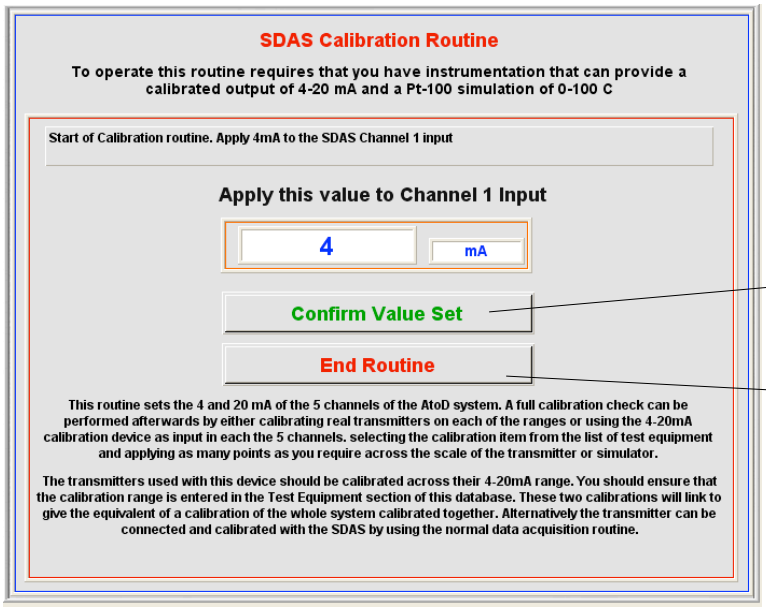
This is the routine for the original single channel SDAS units. This was the original SDAS unit and is covered here for completeness.

This is the routine for SDAS units that have 5 x 4-20mA inputs. THE FOLLOWING ROUTINE SHOWS TO THIS SELECTION.

This is the routine for SDAS units that have 8 x 4-20mA inputs. This is same as teh 5 channel except it continues for another 3 channels.

The 5 channel is illustrated here but the 8 channel routine just has different labeling and 3 more channels in the routine. The single channel SDAS stops after the temperature calibration.

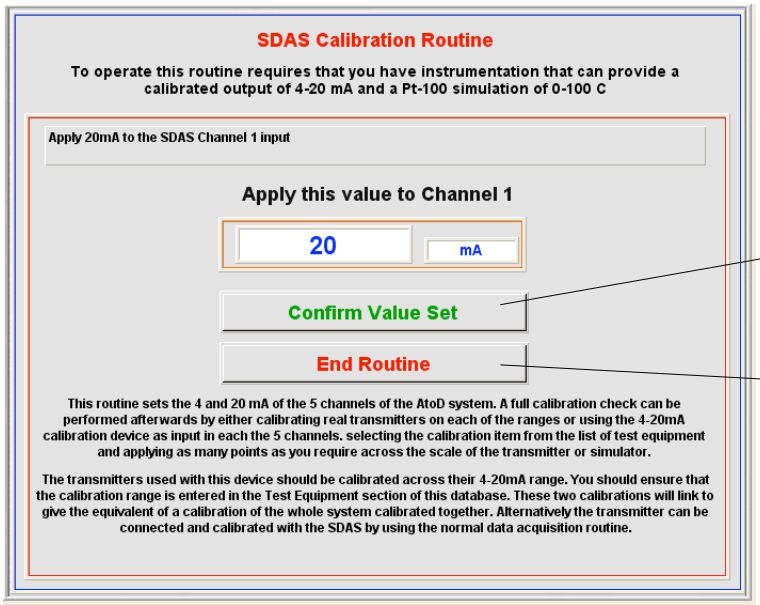
This screen appears next



Click this when you have 4 mA set on the mA input. Check this before you click.

If you wish to abort this routine click this. Note that calibration points up to this point will still be stored in the SDAS A/D system.

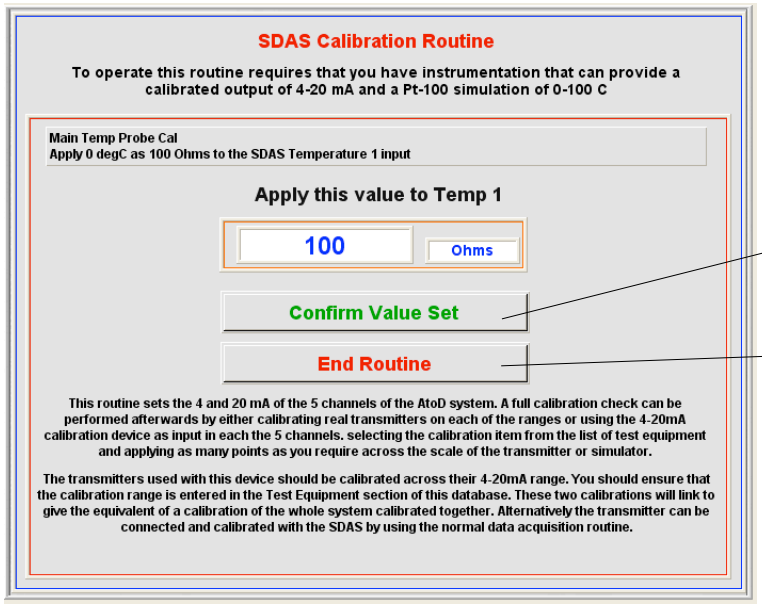
This screen appears next



Click this when you have 20 mA set on the mA input. Check this before you click.

If you wish to abort this routine click this. Note that calibration points up to this point will still be stored in the SDAS A/D system.

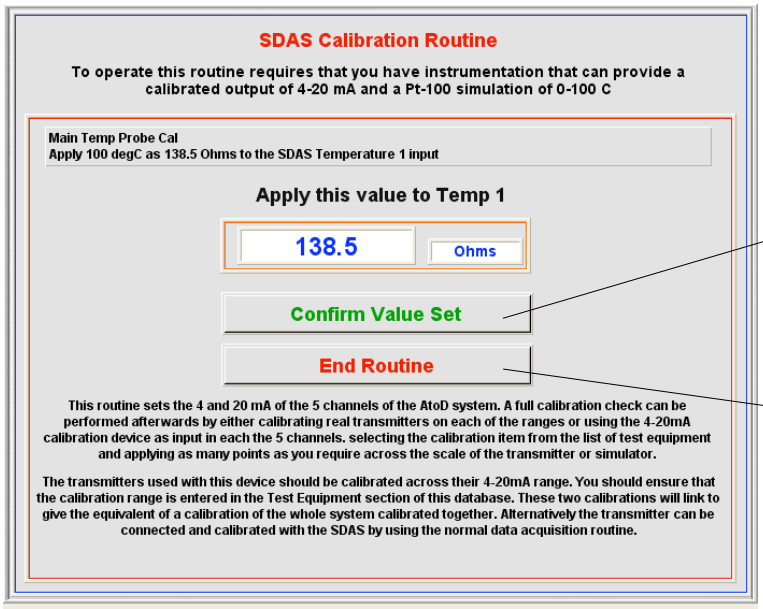
This screen appears next



Click this when you have 100 Ohms or 0 degC set on the Temperature 1 input. Check this before you click.

If you wish to abort this routine click this. Note that calibration points up to this point will still be stored in the SDAS A/D system.

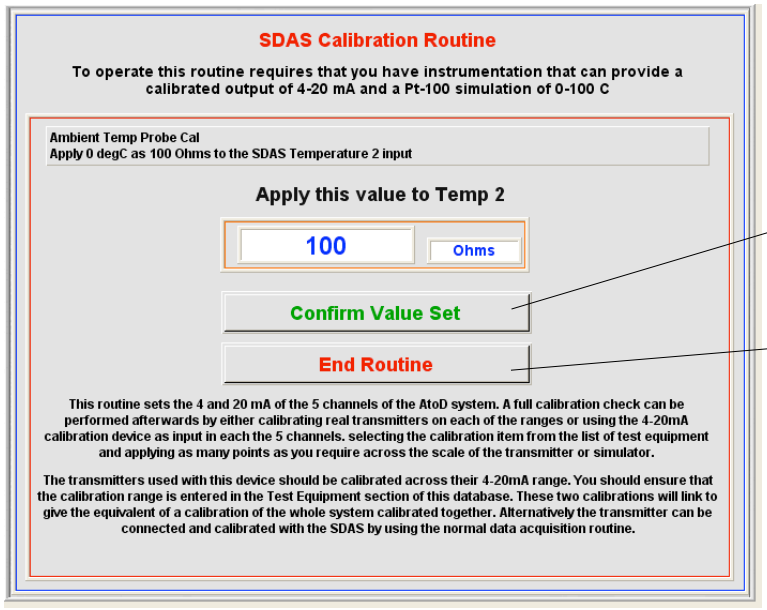
This screen appears next



Click this when you have 138.5 Ohms or 100 degC set on the Temperature 1 input. Check this before you click.

If you wish to abort this routine click this. Note that calibration points up to this point will still be stored in the SDAS A/D system.

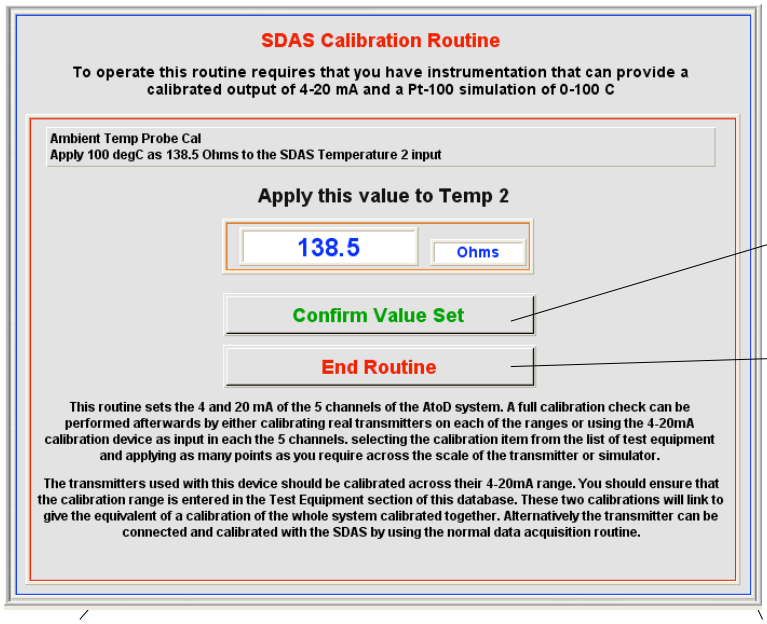
This screen appears next



Click this when you have 100 Ohms or 0 decG set on the Temperature 2 input. Check this before you click.

If you wish to abort this routine click this. Note that calibration points up to this point will still be stored in the SDAS A/D system.

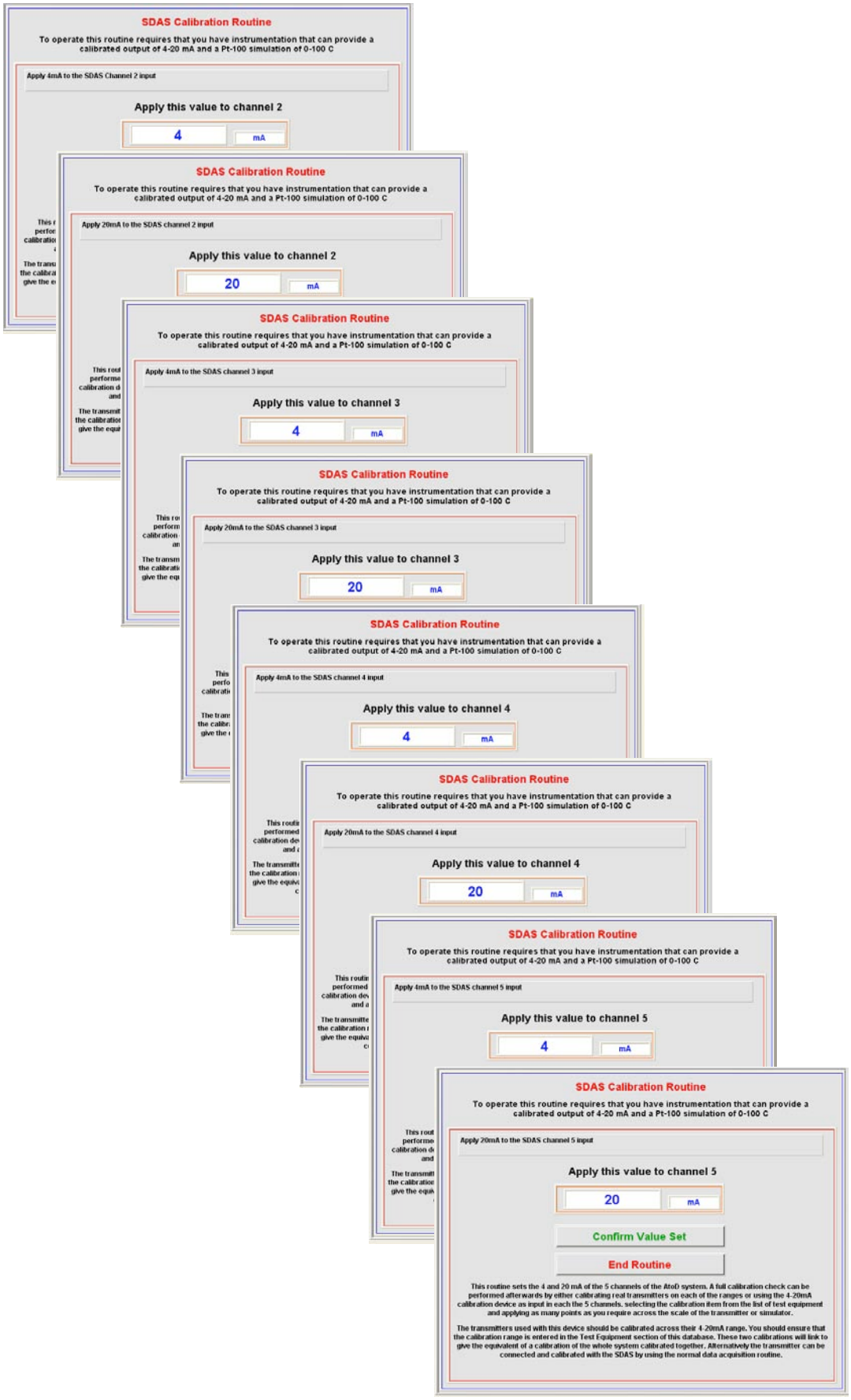
This screen appears next



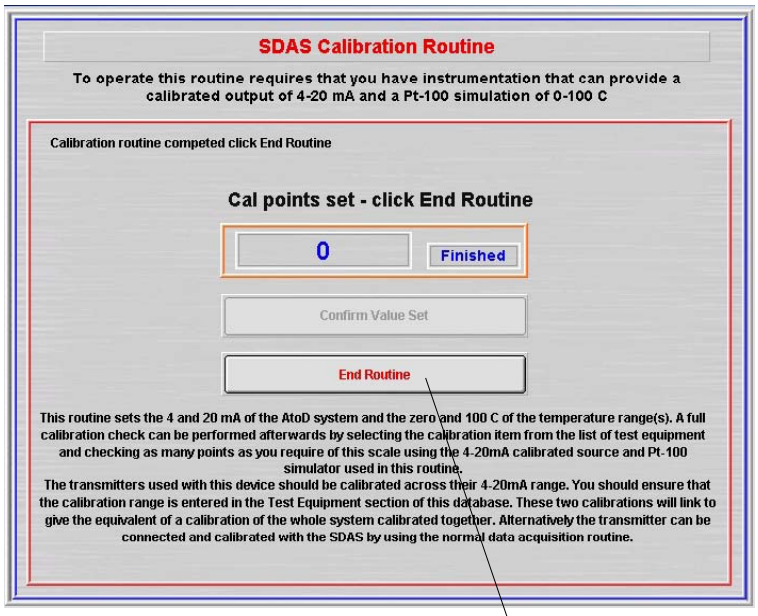
Click this when you have 138.5 Ohms or 100 degC set on the Temperature 2 input. Check this before you click.

If you wish to abort this routine click this. Note that calibration points up to this point will still be stored in the SDAS A/D system.

The 4-20mA calibration screen appear for each channel now in sequence.



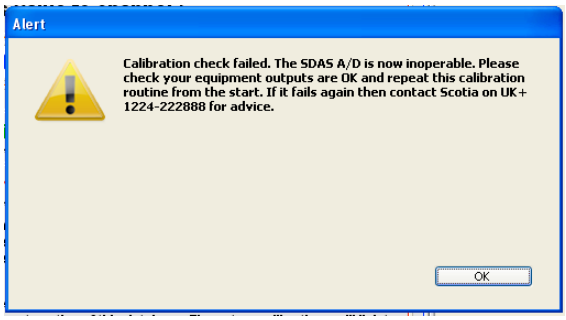
The SDAS unit I/O unit now performs a values check. If this ok then this screen appears and the unit is now calibrated.



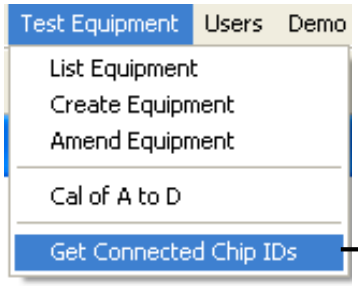
Click End Routine to exit the calibration

The values over the 4-20 mA and temperature ranges can be checked by providing input over the range using the calibration equipment and noting the values in the normal data gathering mode. A calibration certificate can be produced externally from these values.

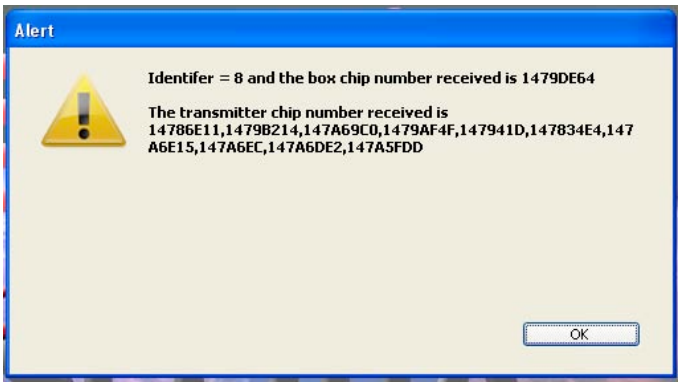
If the SDAS I/O check gives an error then this screen appears. The SDAS I/O now may fail to operate correctly until an acceptable calibration is done.



Get Connected Chip IDs

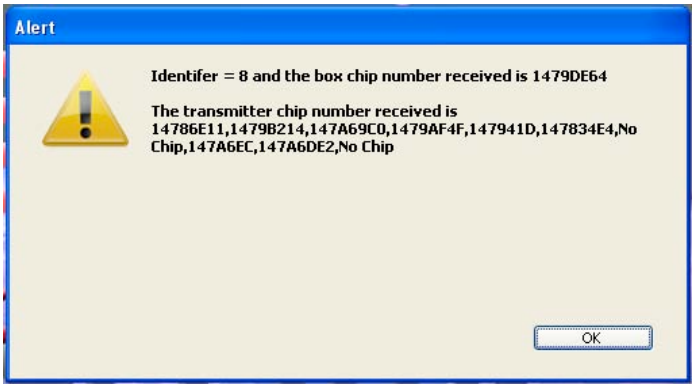


This routine gives the type and box chip ID of the SDAS unit and any connected transmitter chips in channel order. This allows the user to find the chip IDs for any Test transmitters or temperature entry.



The first 8 IDs are the transmitters connected to channels 1 to 8. This is followed by the chip IDs of the temperature probes. Only the SDAS5 uses chipped temperature probes.

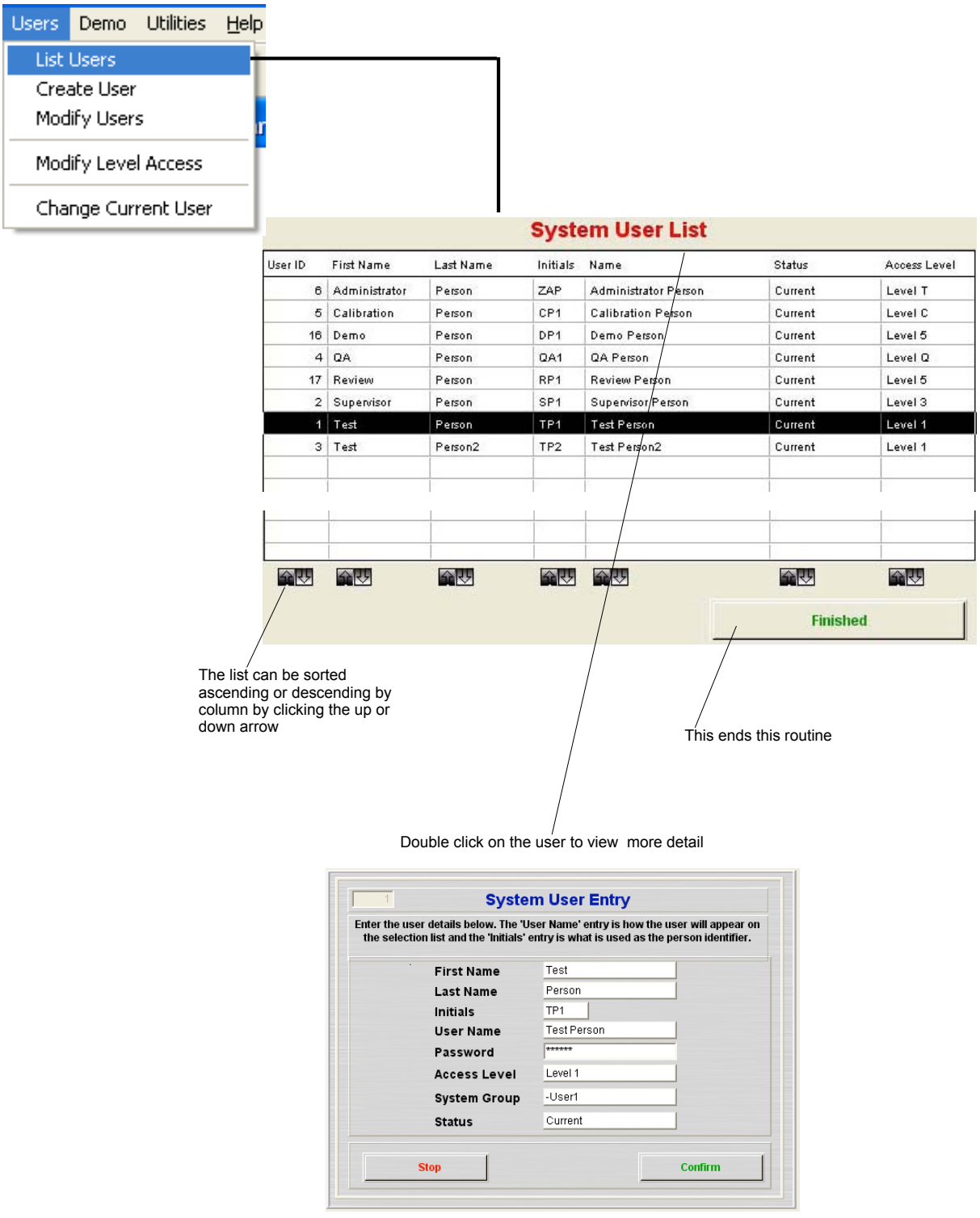
If any channels or temperature probes are either disconnected or do not have chipped items then this is shown as 'No Chip' as shown in the example below.



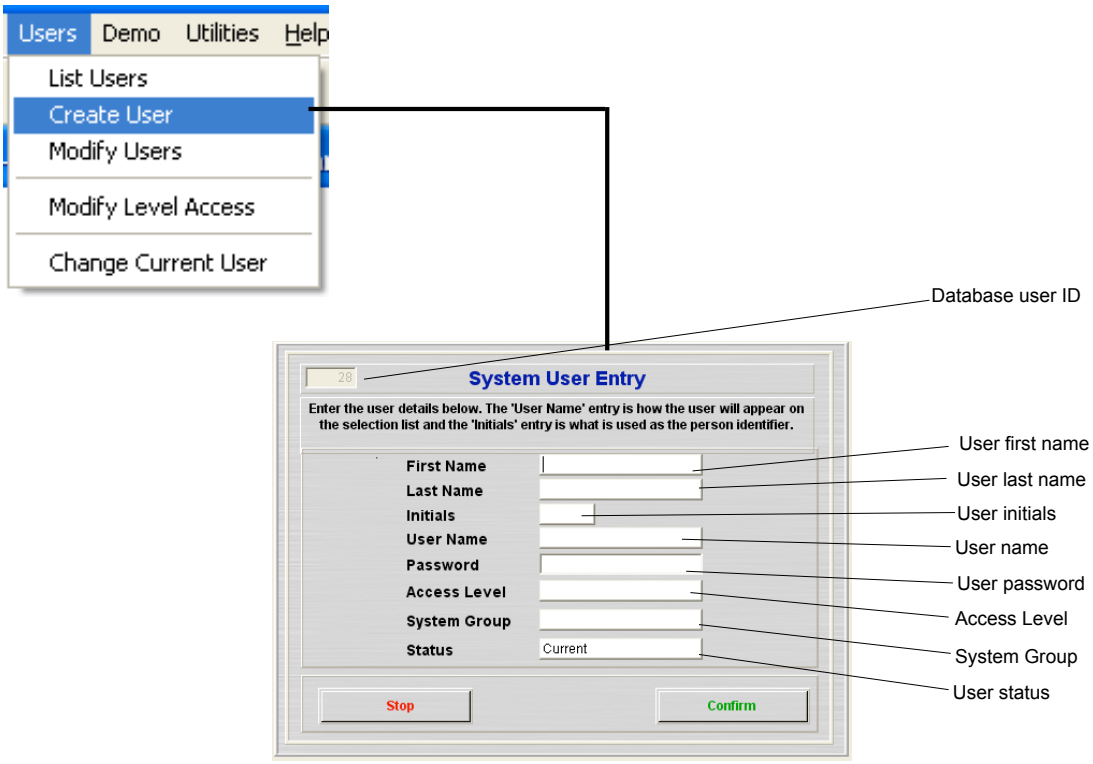
In this example channel 7 and temperature probe 2 are disconnected

User Menu

List Users

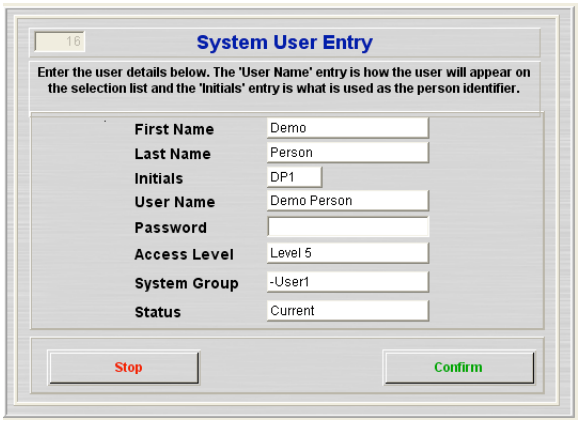


Create User

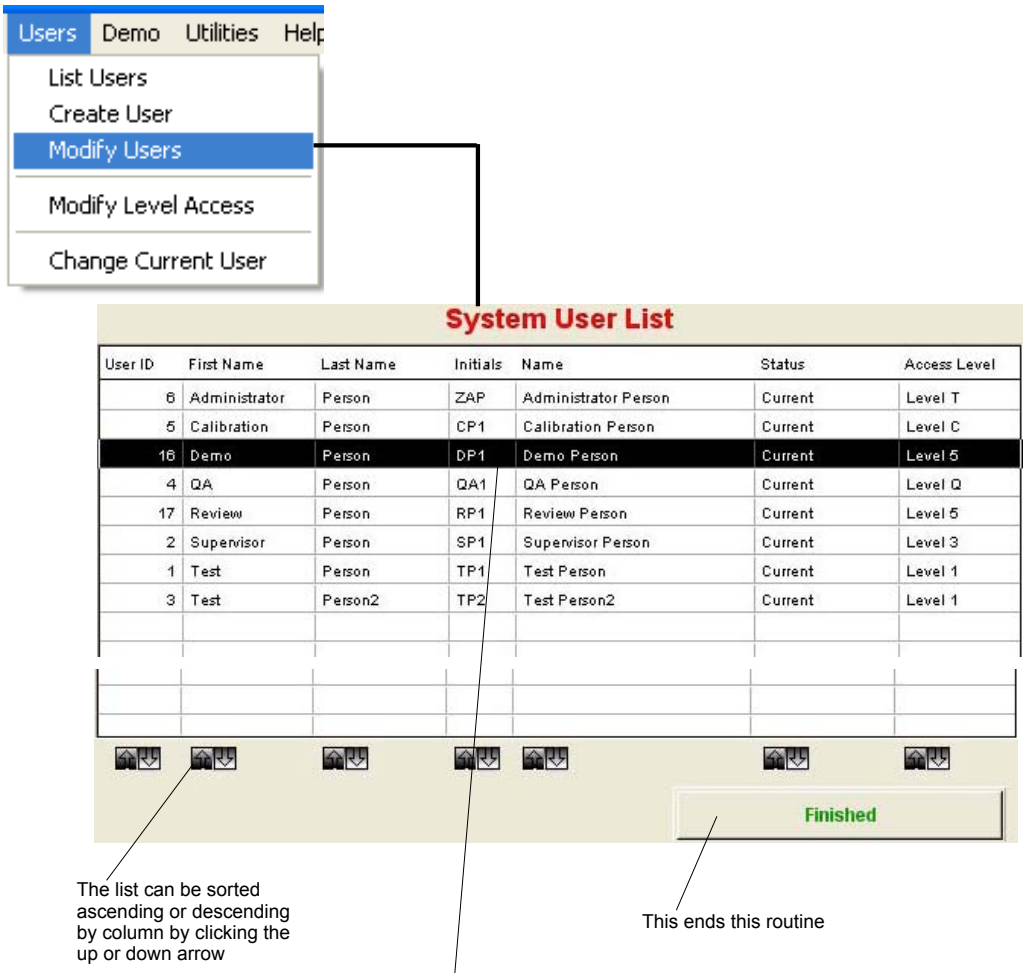


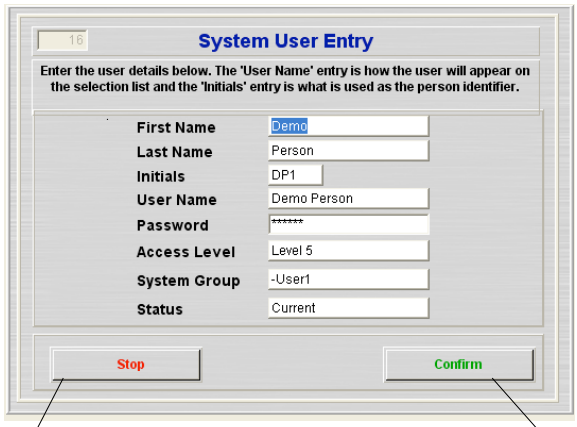
The user first and last name can be entered as anything. This is copied to the User name. The user name can then be adjusted to allow for the user being ‘known’ as something different. The User Name is what appears on selection lists. The initials are database unique and must be entered as 3 alphanumeric characters. If these exist in the database then you are alerted and must choose other initials. These are used to identify the user in the data label system. Password can be any alphanumerics. Access Level allows this user the access set in the Access Level system. System Group is the group of users that access the system using the entry password when the SDAS is started. Status is the current status of this user. Only users with status ‘Current’ will appear on the selection pop-up list and be able to log in.

An example of a completed entry

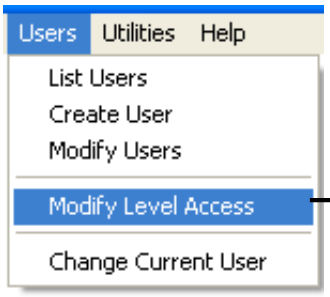


Modify Users





Modify Level Access



Access to this menu item is restricted. If the user does not have access then this screen appears

Choose the Access Level to be altered from the pop-up list

When the Access Level is chosen the permissions set for that level are shown. They can then be set or unset by clicking on the box beside each item.

Revert to the previous settings

Confirm to accept the changes made

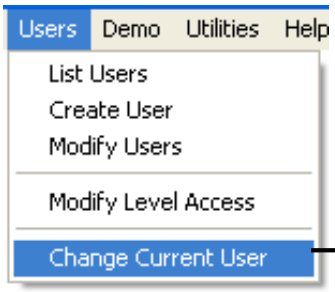
Access Levels:

Password: The user is required to enter a password to log on. If not checked the user does not require a password.
Deletions: Allow the user to delete data or graphs
Equipment: Allow the user to enter or amend the testing equipment file. Allow the user to see the list of testing equipment.
Users: Allow the user to enter or amend the system user list. Allow the user to see the list of users.
Export Records: Allow the user to Export Data and Graphs. Allow the user to export other data e.g. user lists.
Import Records: Allow the user to Import Data and Graphs. Allow the user to import other data e.g. user lists.
Acquiring Interval: Allow the user to set the acquiring interval before each data acquisition.
While Acquiring: This limits what the user can do while actually acquiring data. Allow Reviewing allows the user to access the Review screen from the acquiring screen. Allow creating graphs - with access to the Review screen the user can create graph files. Allow changing Review - with access to the Review screen the user can choose to view another data file.
Reviewing: Allow the user to access the Review Data menu item. Allow the user to access the Review Graphs menu item.
Printing: Allow the user to print data listings.
Company/Customer: Allow the user to set the Company name. Allow the user to set the default Customer name.
Calibration: Allows SDAS calibration. Restrict access to this as inexpert use of this routine may render the SDAS inoperable.
General: Allow the user to set the default acquiring interval. Allow the setting of the default Comms port - this is to allow the SDAS program to be used on a PC which may access a remote unit via another port. Restrict access to this as inexpert use of this routine may render the SDAS inoperable. Allow setting logo - allows the user to load up a new logo for appearing in the printed graphs.
System Log: Allows users to view the system log

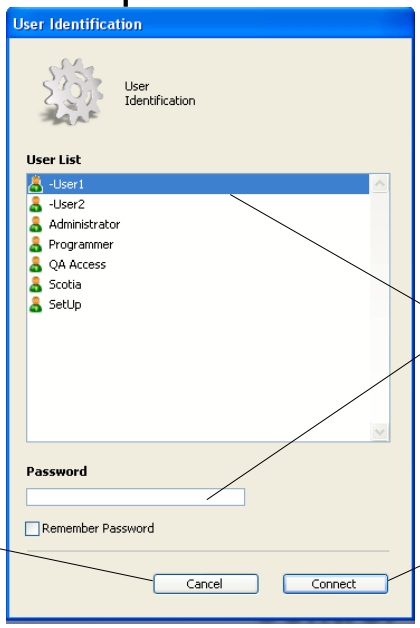
If access is denied due to a user not having a high enough Level access for any menu items then this screen appears.

If access is denied due to a user not being in the correct log on Group for this action then this screen appears.

Change Current User



This allows the current user to be changed without restarting the SDAS system.



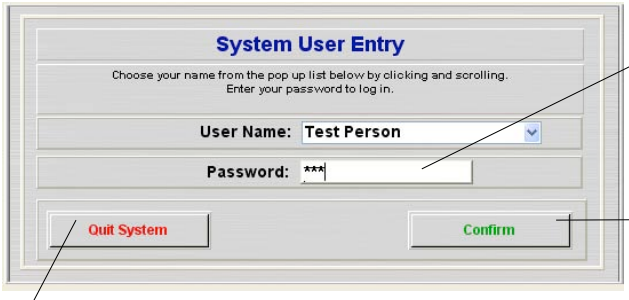
Choose the User Group access name and enter the User Group password here

Cancel returns to the main screen with the previous user reset

Confirm to proceed to user name and password entry

Choose the user name from the pop up list here

Only user names in the Access Group chosen above will appear in the pop up list for choosing.



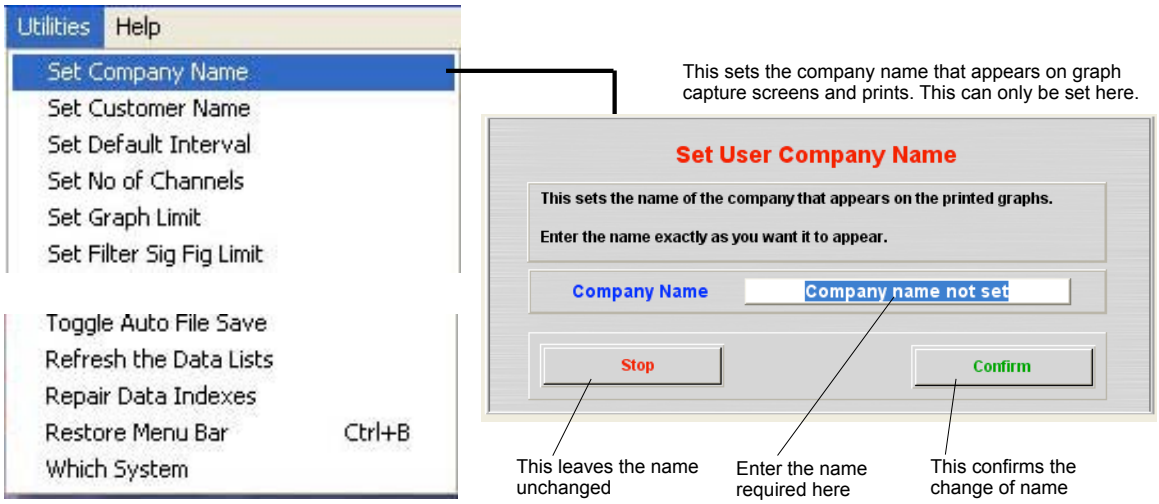
When the name has been chosen you enter the password for this user. The entry does not show for security

Confirm to proceed back to the main screen with the new user.

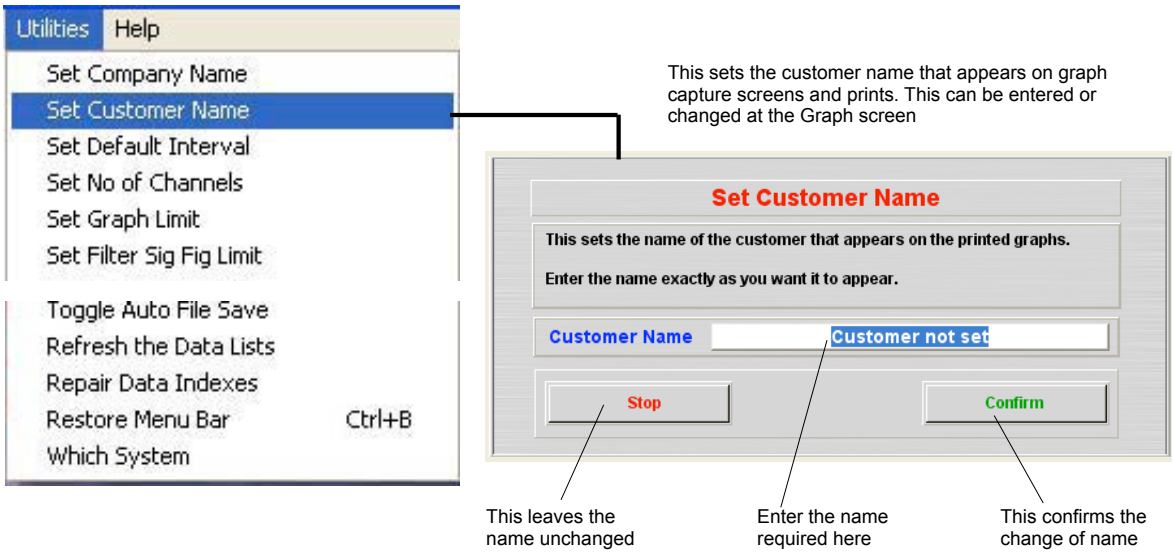
If you do not have a valid user password then Quitting from the SDAS program is the only other option at this point.

Utilities

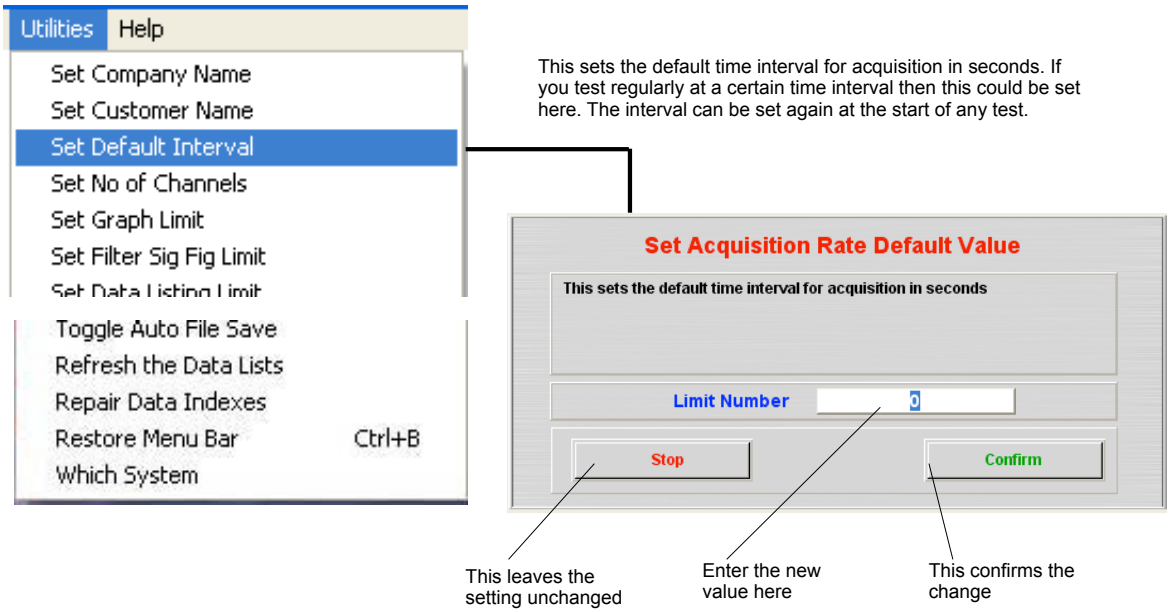
Set Company Name



Set Customer Name



Set Default Interval



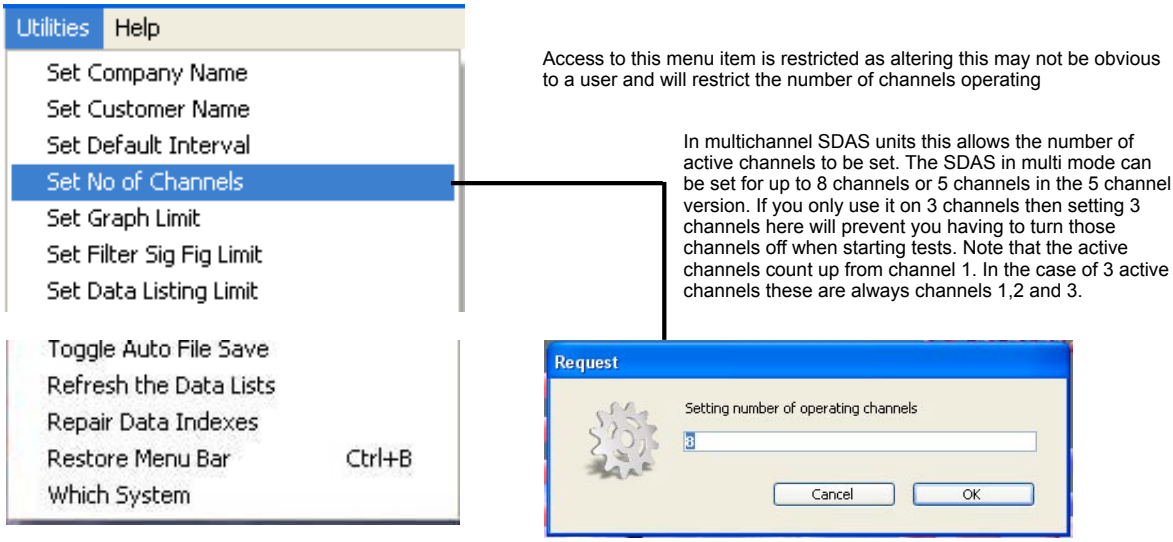
This sets the default time interval for acquisition in seconds. If you test regularly at a certain time interval then this could be set here. The interval can be set again at the start of any test.

This leaves the setting unchanged

Enter the new value here

This confirms the change

Set No of Channels

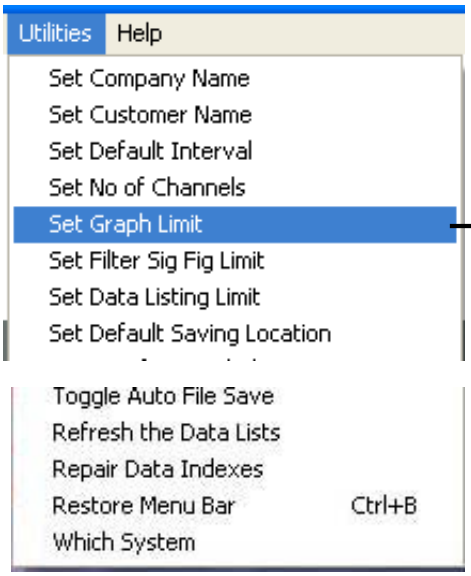


Access to this menu item is restricted as altering this may not be obvious to a user and will restrict the number of channels operating

In multichannel SDAS units this allows the number of active channels to be set. The SDAS in multi mode can be set for up to 8 channels or 5 channels in the 5 channel version. If you only use it on 3 channels then setting 3 channels here will prevent you having to turn those channels off when starting tests. Note that the active channels count up from channel 1. In the case of 3 active channels these are always channels 1,2 and 3.

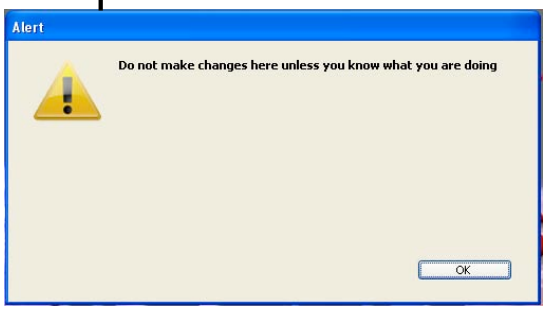
Channels above the number set are disabled and cannot be selected or acquired from even if a transmitter is attached

Set Graph Limit

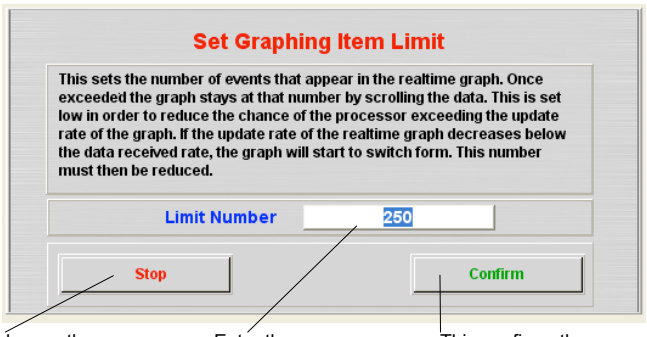


This sets the acquisition graph limit. This is a system limit set to prevent the processor becoming overloaded while graphing and acquiring. It sets the number of events showing in the acquisition graph before the graph starts to scroll out of the graphing display. Data acquired in not affected in any way.

A warning is presented here as this can affect the visual performance of the SDAS unit.



This is the number of points that are shown in the current acquiring graph before the graph starts to scroll right. You should not start resetting this unless you really need to see more current data points and are prepared to have an occasional display glitch if the processor gets busy. This does not affect the ability of the SDAS to collect and store data.

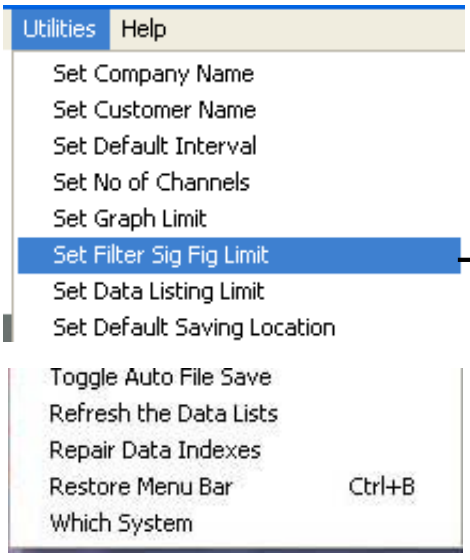


This leaves the setting unchanged

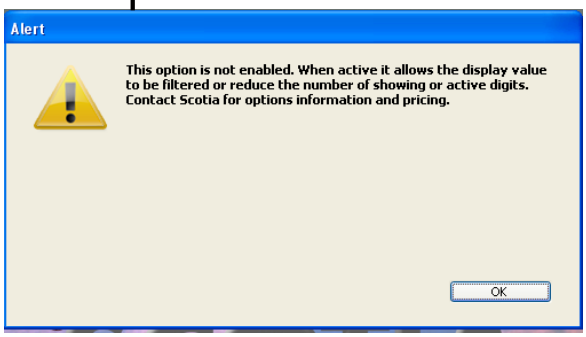
Enter the new value here

This confirms the change

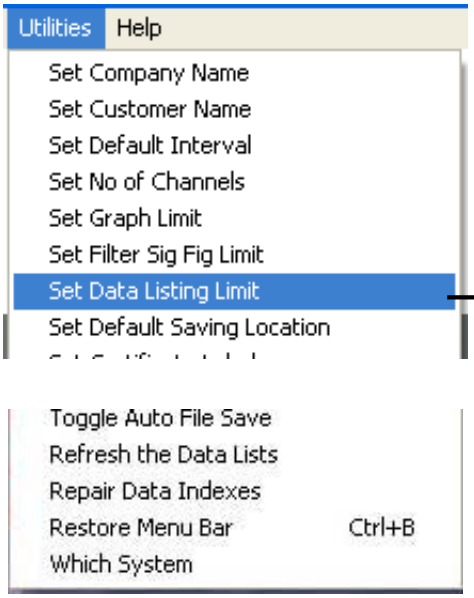
Set Filter Sig Fig Limit



When this option is active it allows setting of various display and acquisition significant figures. See the Options section for more details. If not activate then this screen appears.



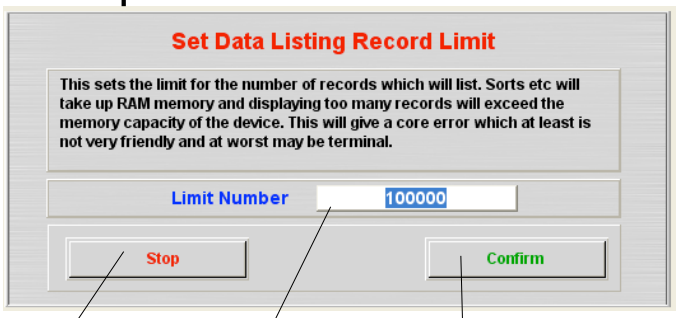
Set Data Listing Limit



This sets the limit for acquired data listing. The option to show all data is disabled after this number of records. If your search for data events gives more that this value the list will not show.

Sorting data and other actions like scrolling a list with more than this number can cause memory problems. If you have a need to operate with lists of more than this you can increase this number but be aware that you may experience core memory error messages which are quite blunt and in some cases the system may quit.

This is set to 100,000 by default

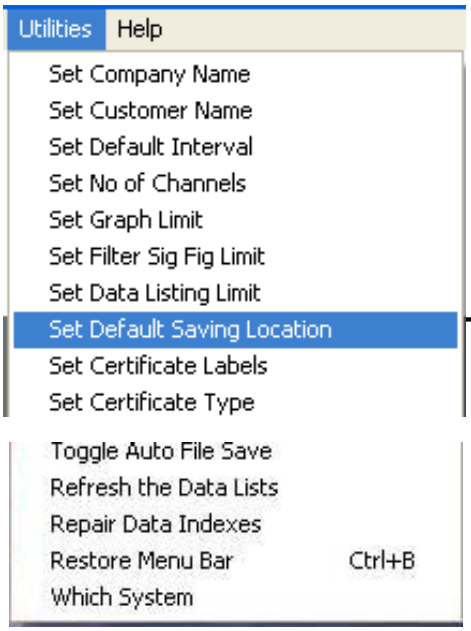


This leaves the setting unchanged

Enter the new value here

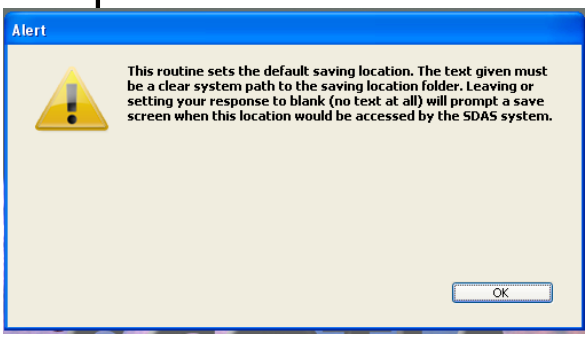
This confirms the change

Set Default Saving Location

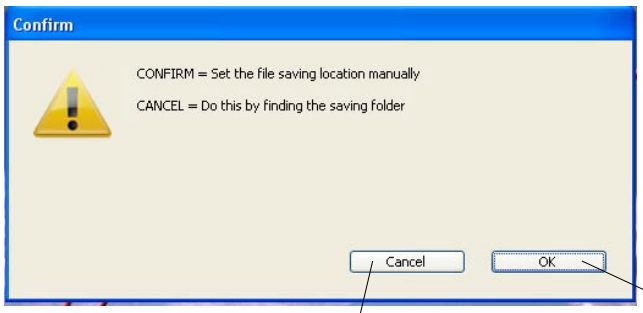


This sets the default saving location.

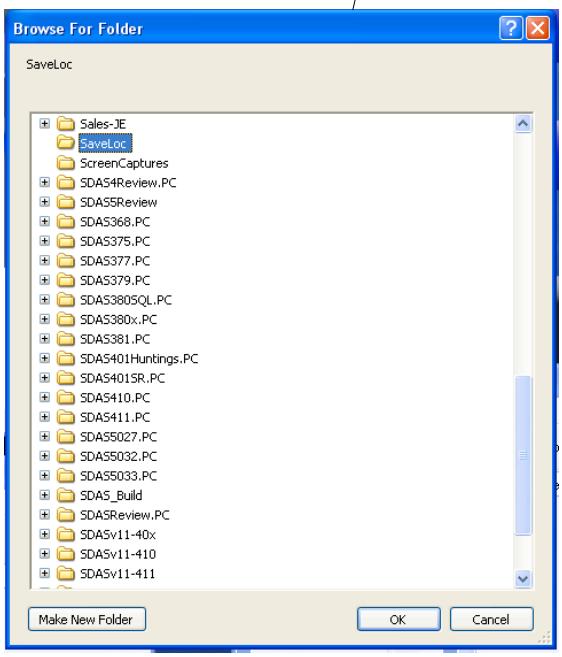
This is used for options that automatically save to a location on the drive or attached network



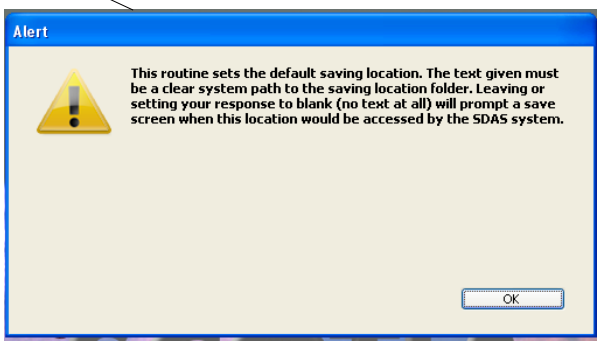
This gives the user the chance to escape from this routine if entered by mistake

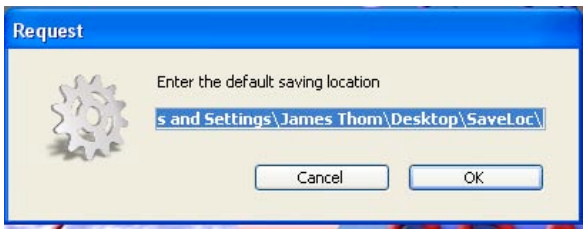


A choice of setting mode is offered



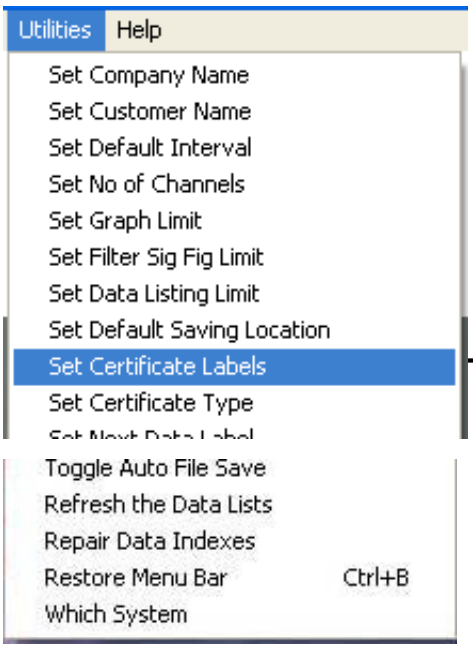
Navigate to the folder and select it by clicking on it. There is the option to create a new folder.



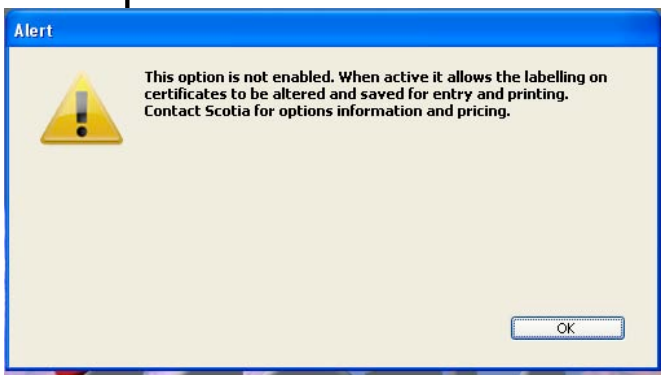


A clear path must be entered here. Be careful as it will save anywhere you set

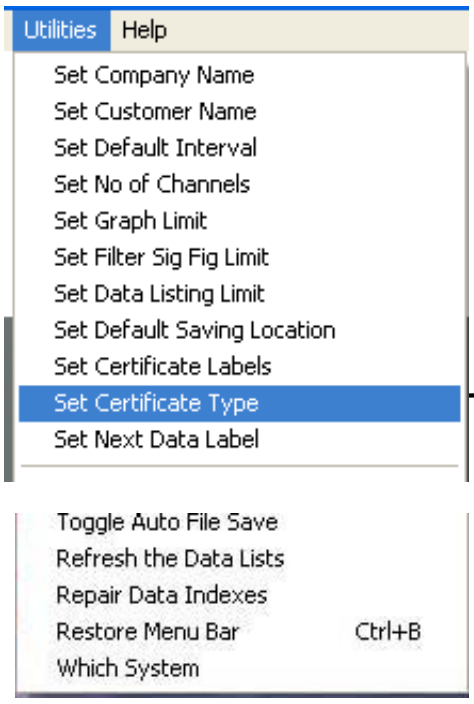
Set Certificate Label



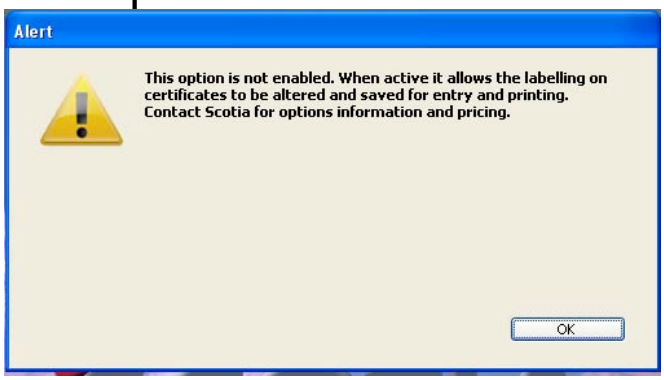
This option allows the labels on the certificates to be reset by the user. This is covered in the options section of this manual. If this is not enabled then this alert screen appears.



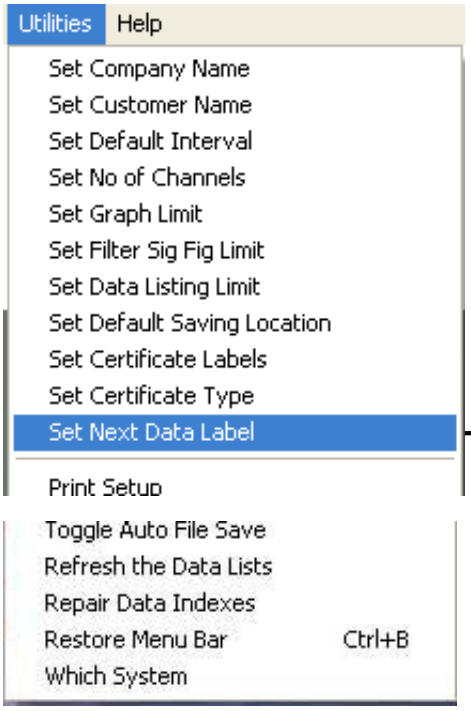
Set Certificate Type



This option allows the type of certificates to be chosen. This is covered in the options section of this manual. If this is not enabled then this alert screen appears.



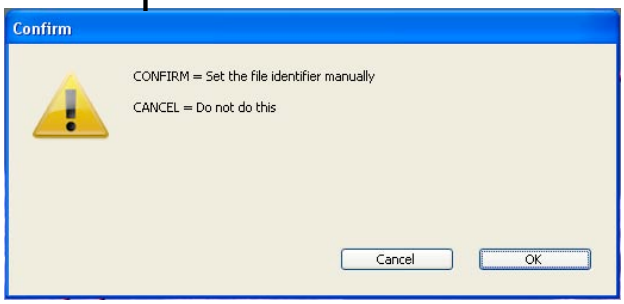
Set Next Data Label



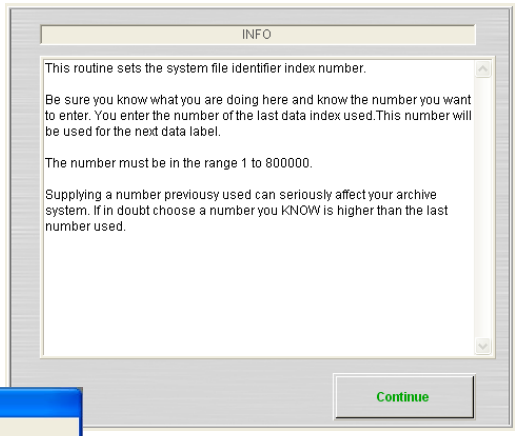
Note that this identifier forms a unique part of the file name for each data acquisition collection of records. This together with the serial number of the SDAS, the user ID, and the additional reference - entered by the user - form the unique data ID. Setting any of these to be the same as another set of results will load both sets of data into the same display graph with uncertain results.

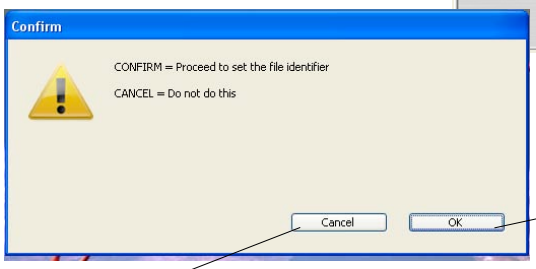
Access to this menu item should be restricted

This item allows the setting of the next file identifier. This should only be used where a SDAS data file has been replaced and you wish to continue the sequence of data file numbers. You should ensure that you set this number above any used previously as duplicate references will seriously damage the display function of the SDAS.

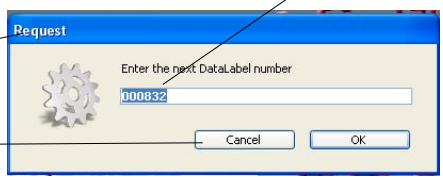


Read and heed to warning given here



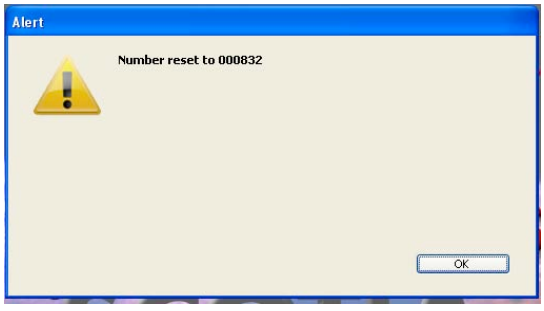


Enter the data label number required



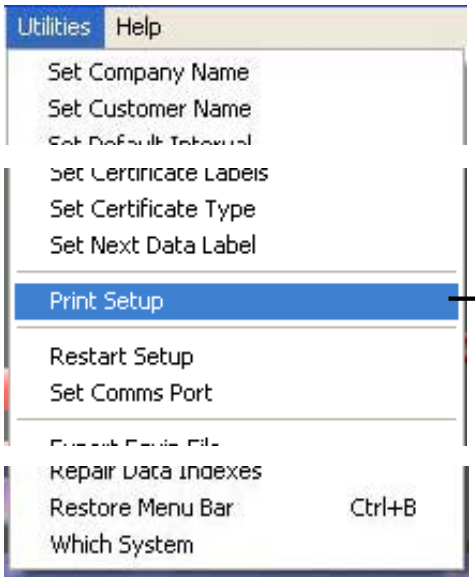
This stops this routine with no changes

This stops this routine with no changes



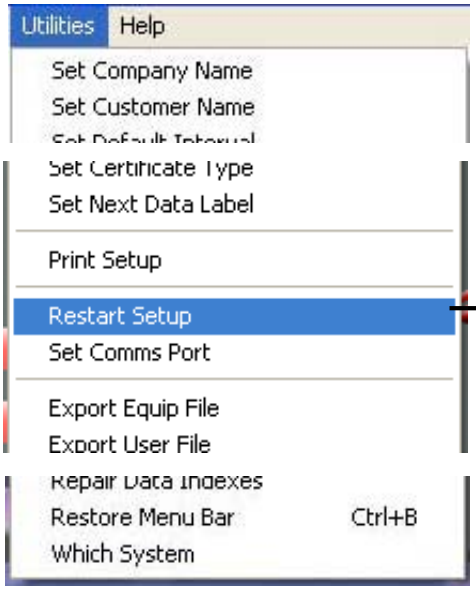
This confirms the new ID number set

Print Setup



This allows the current printer setup to be checked by displaying the standard print dialogue boxes without printing.

Restart Setup



This runs the main setup routine of the SDAS. It is included mainly for debugging purposes as it resets all the system variables to their default values as if the SDAS had been restarted.

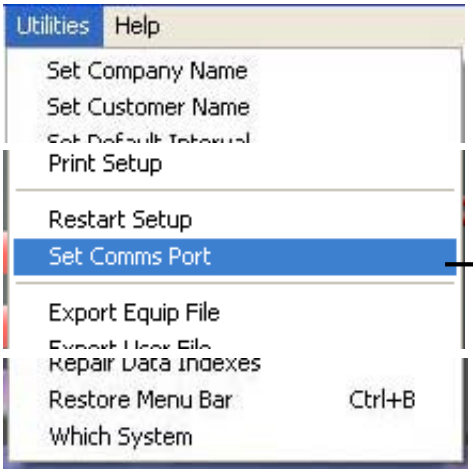
Set Comms Port

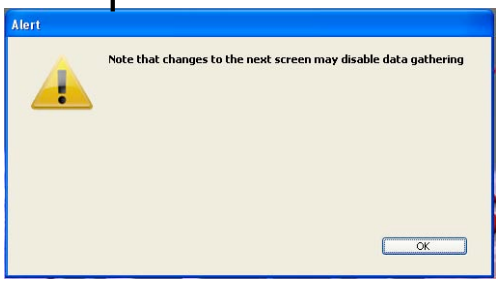
This allows the comms port used by the SDAS program to be set. This is to allow the SDAS program to run on PCs which may use a port other than the comms port for communicating with a ScotiaDatabox.

The type of handshaking can also be set to allow for different PCs being used. Toggle this on an SDAS and the SDAS will stop operating. You should only be touching this control under the guidance of Scotia technical support.

The USB check box is for PCs without a serial port. This requires additional hardware and the SDAS program settings. Do not check this except under the guidance of Scotia technical support.

The timeout or handshaking should also only be altered under the guidance of Scotia technical support.



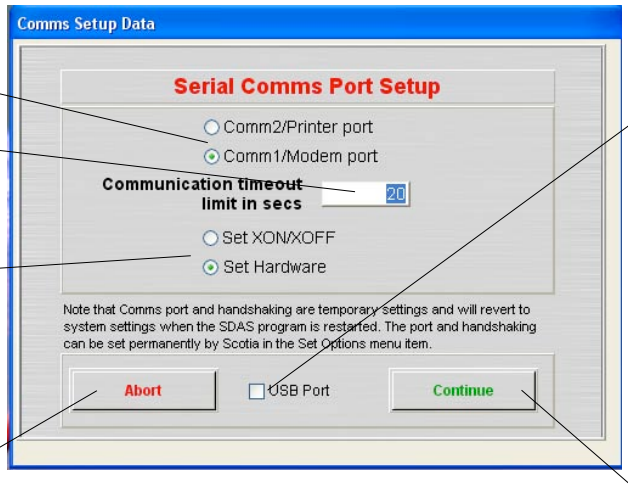


This alert warns of possible problems when this item is accessed.

This alters the port used by the SDAS program to receive the data link to the I/O board.

This sets the time out value. This is the time that the SDAS program waits for data from the I/O unit of the SDAS before stopping and alerting the user.

This alters the handshaking used by the SDAS program to receive the data link to the I/O board.

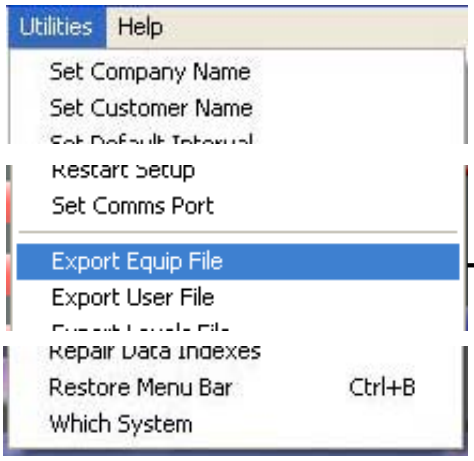


This allows the use of the PC USB port. This requires additional hardware and settings on the SDAS program

This leaves the settings unchanged

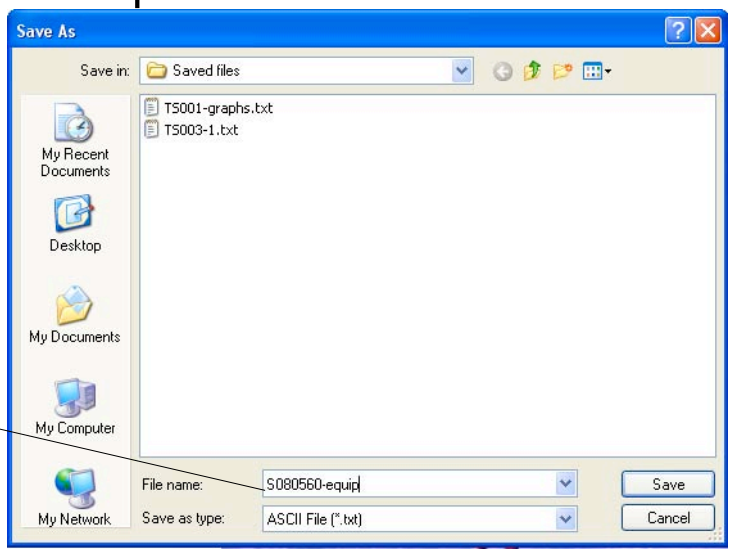
This confirms the changes

Export Equip File

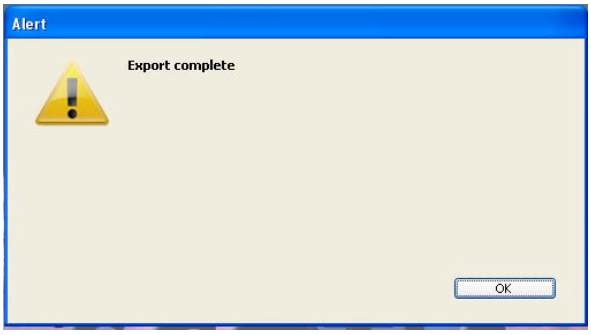


This allows the Equipment file from an SDAS to be exported in a form that can be read by another SDAS

This leads to the standard save dialogue to allow all equipment items currently stored to be exported in a secure format which can be read by the import equip routine. Be sure to clearly label the equipment file.

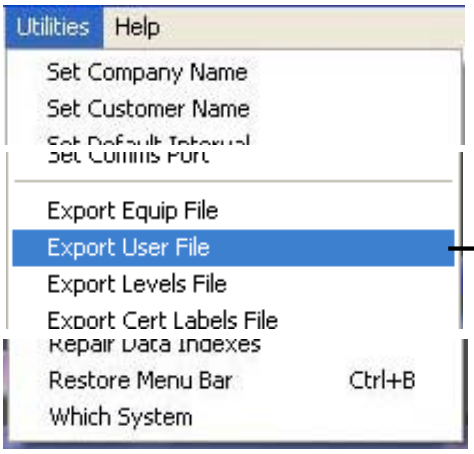


Enter the saving label here



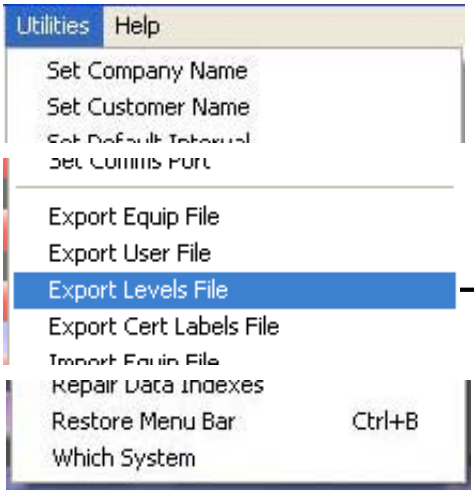
A confirmation of the export is given at the end of this routine.

Export User File



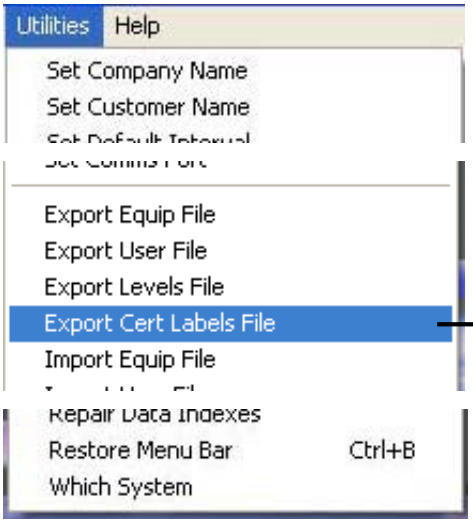
This is a repeat of the Equipment file export above except it exports the User File

Export Levels File



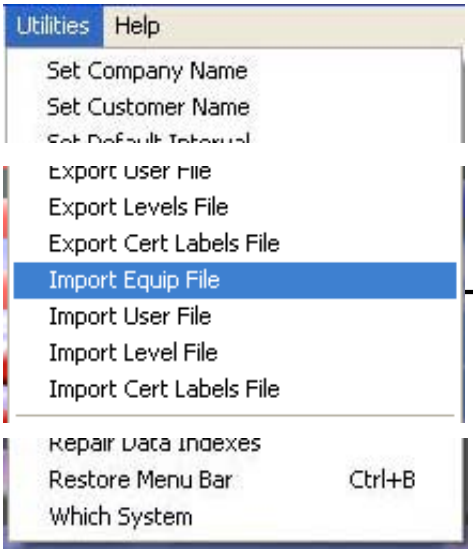
This is a repeat of the Equipment file export above except it exports the Levels File

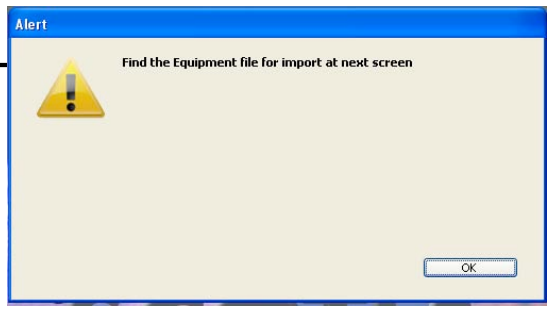
Export Cert Labels File



If the Certificates option is enabled then this is a repeat of the Equipment file export above except it exports the Certificate Labels File

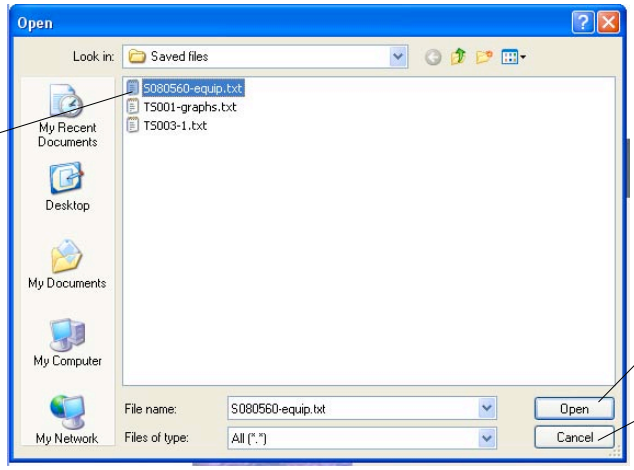
Import Equip File





This leads to the standard import dialogue to allow equipment items to be imported.

Choose the equipment file for import



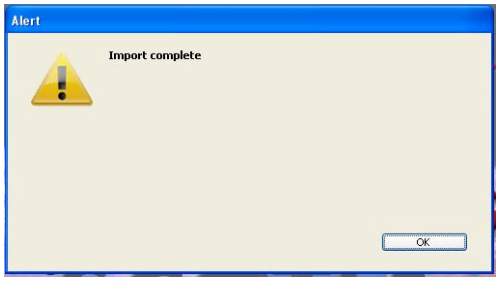
Click Open to proceed to import

Click Cancel to stop this routine

The Equipment file can be added to the existing one or used to replace the existing one. Check the method you require.

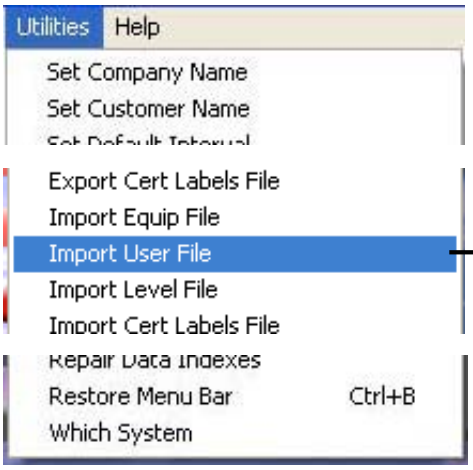
A check is applied to the file to ensure that you are importing a valid Equipment file. If the wrong header label is present then an alert appears and import stops

Since the Equipment file export is not selective - you must export all of the file - then you would only choose to add to the existing file if the transmitters etc on the exporting SDAS were additional to those currently on this SDAS. If you choose to add to the existing file then a duplicate check is applied to the data as it is imported. If any items with a matching chip ID or serial number are found then you will be alerted and this item will not be imported.



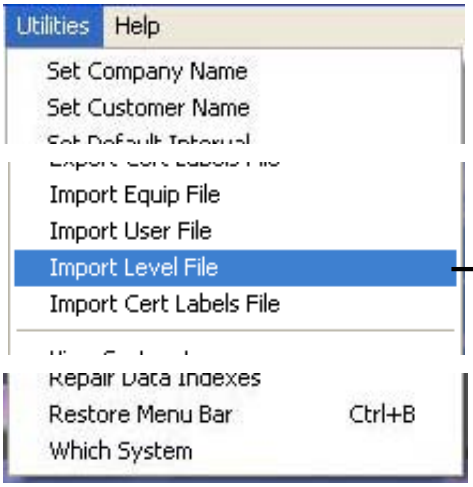
This screen appears to indicate that import has completed

Import User File



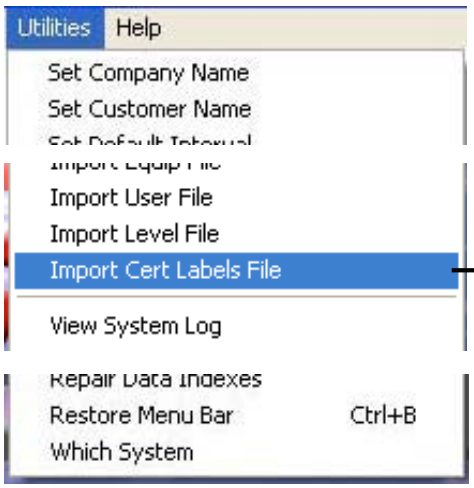
This is a repeat of the Equipment file import above except it imports the User File

Import Level File



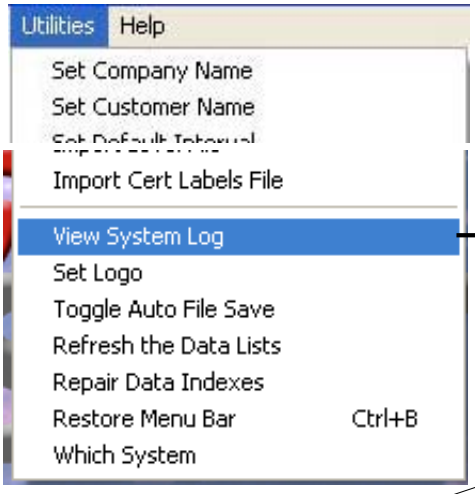
This is a repeat of the Equipment file import above except it imports the Levels File. Note that the imported Levels file overwrites the current one as there are no additional Levels.

Import Cert Labels File

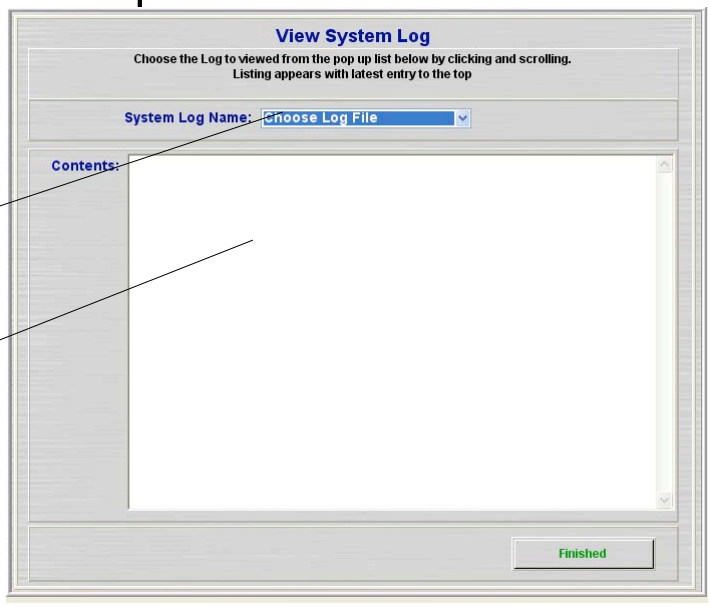


If the Certificates option is enabled then this is a repeat of the Equipment file import above except it imports the Certificate Labels File. Note that the imported Certificate Labels file overwrites the current one as there are no additional Certificate Labels files.

View System Log



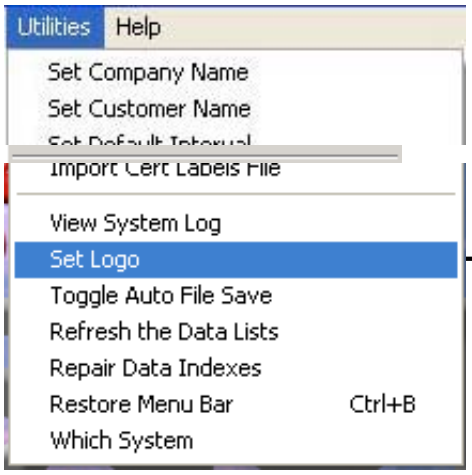
This allows the system log to be viewed. The system log contains log on and off data for each user and any entry to noted menu items.



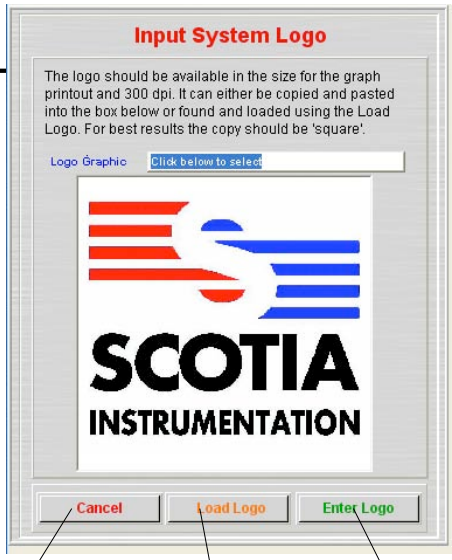
Choose the log file to be viewed from the pop up list

Log data then appears here

Set Logo



This allows the logo for the graph printing to be reset by importing a graphic.



To set the SDAS to have no logo click on the current logo to select it and then press the delete key

The graphic to be imported should be square or it will distort when displayed. The logo should be saved to storage media in jpg form. This is then found by the normal PC load routine after clicking the Load Logo button.

The other way is for the logo to be captured to the clipboard of the PC in the usual way. Then click on the existing logo graphic and paste your new graphic. If the graphic is too small or not square some distortion may occur.

The first method gives the most reliable results.

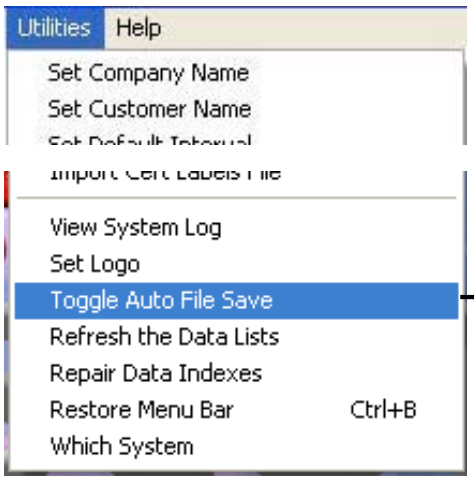
If you do not have a graphic of your logo either leave the existing one or replace it with a 'blank' graphic.

Do not make any changes here

Navigate to the logo you wish to import.

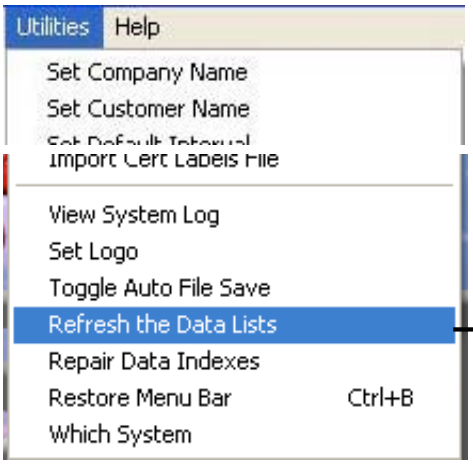
Confirm changes to this screen

Toggle Auto File Save



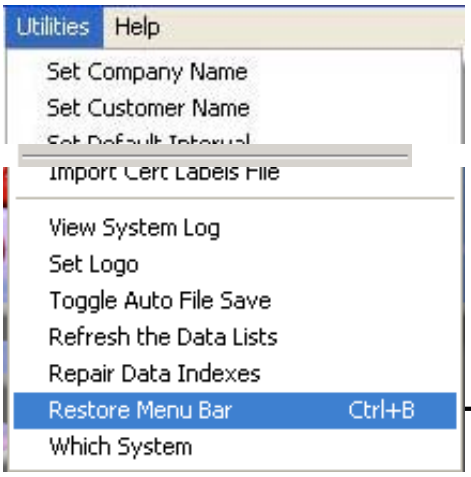
When this option is active - this toggles on or off each time it is selected. When on it saves a text file of a test to the default saving location at the end of each test.

Refresh the Data Lists



The Data Lists are used to allow the user to pick data or graphs saved by label and user references. If an item appears on a list but is not found by the system then this routine should be run. Also, if you are sure you have saved a file or graph that does not appear on a list for choosing then running this routine should correct the list. Note that large databases may take several minutes to rebuild these lists.

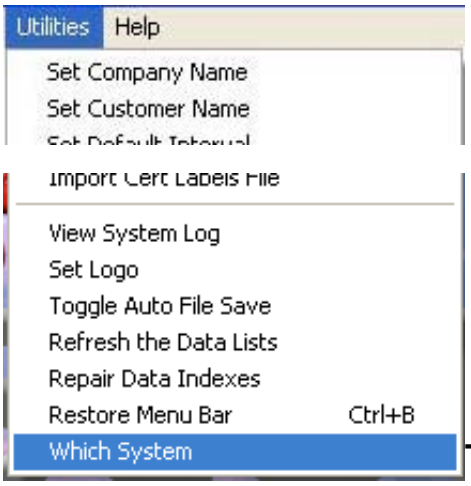
Restore Menu Bar



The menu bar is removed once a menu item has been selected to avoid the user trying to select it while operation screens are active. Should a system error occur then the SDAS may reset to the start screen but not showing the menus.

In this case this menu and menu item will not be visible either but it can be activated by holding the Control key down and pressing the B key. Once this is restored then you should go through the close down routine of the SDAS unit, switch off the SDAS, and then restart to ensure all the other linking electronics have reset correctly.

Which System



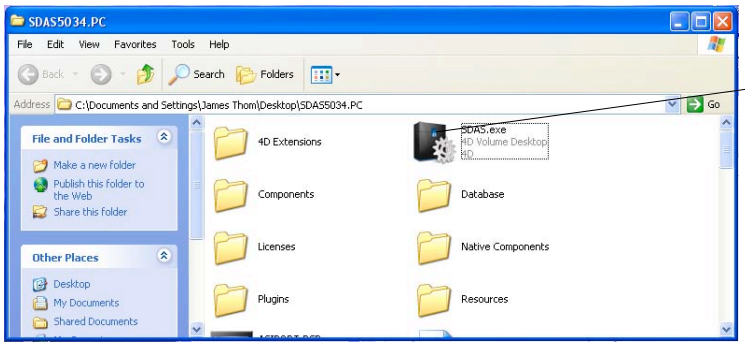
This is included for debugging purposes as certain components of this structure operate differently in different systems. This is just checking the SDAS program is resolving this data correctly.

Other SDAS Devices

Starting the SDAS program on a PC

The SDAS system can be run from a USB stick or a SDAS-5 program downloaded to a PC or PC laptop. This is then used to read from the stand alone range of scotia loggers. These loggers are set up and log using their own controls. The gathered data is then downloaded after the tests are complete. The downloading of the Scotialogger3 and SUDS devices are described here.

The folder containing the SDAS-5 must be found on the PC or USB stick. The folder will be labelled SDAS5034.PC where the 5034 will vary with the version of the current SDAS-5 program in use. Open this folder and identify the item SDAS.exe. Double click on it to launch the program. It should open full screen on the PC.



Launch this item to start the SDAS-5 program

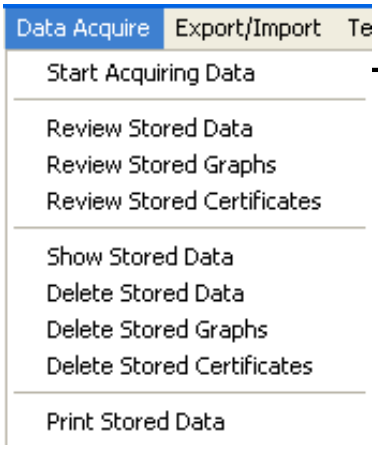
When launched this screen appears on the PC

Scotialogger3

The Scotialogger3 device is a ruggedised single 4-20mA and 2 temperature device. When the data is gathered by the device it is stored in files which are displayed to the SDAS-5 software for downloading. The user can download as many files as they require. Note that the SDAS-5 program supplied with a ScotiaLogger3 is matched to the device. If the ScotiaLogger3 serial number does not match that stored in the SDAS-5 program then you cannot proceed to gather data.

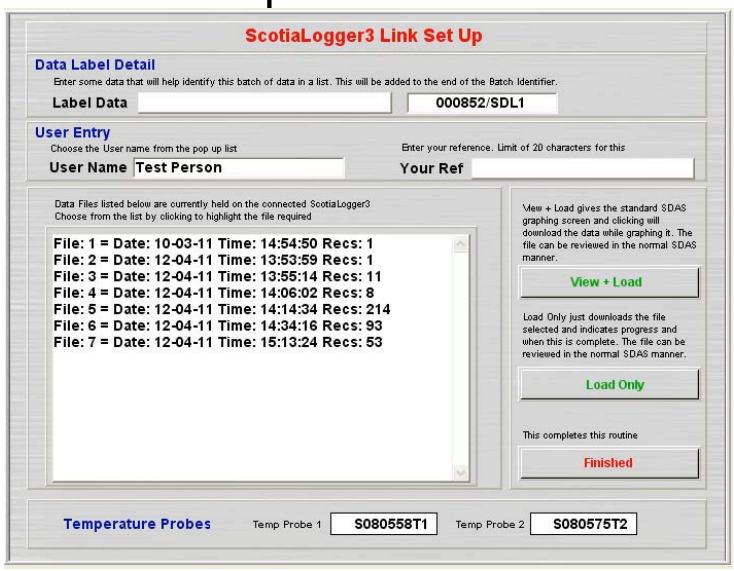
Select from the menus along the top of the screen.

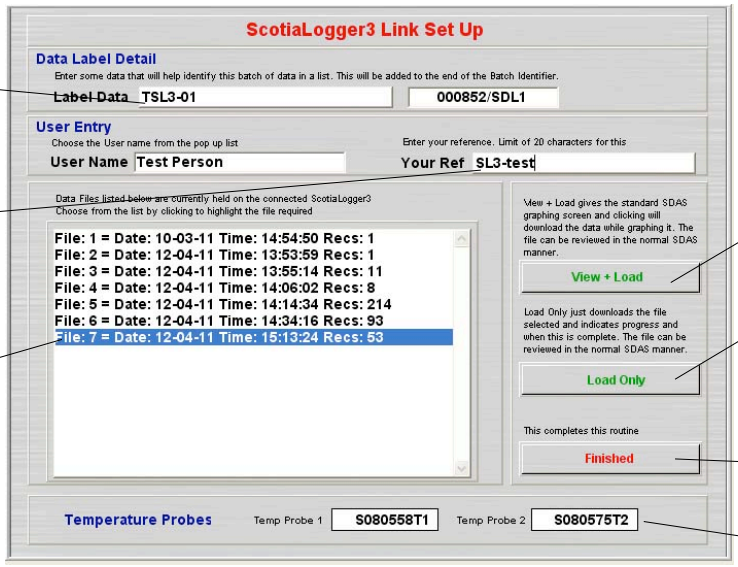
Start Acquiring Data



This is the routine that acquires data into the SDAS-5 program. The ScotiaLogger3 should be connected to the PC or PC laptop and be switched on before starting this routine.

This screen appears showing the choice of files within the ScotiaLogger3





Enter the Label to be used for this file download

Enter the user reference to be used for this file download

Select the file to load by clicking on it to highlight it

Click View + Load to select the file to load and open the logging screen

Click Load Only to select the file to load the file into the SDAS-5 database without viewing the download process.

Finished completes this routine

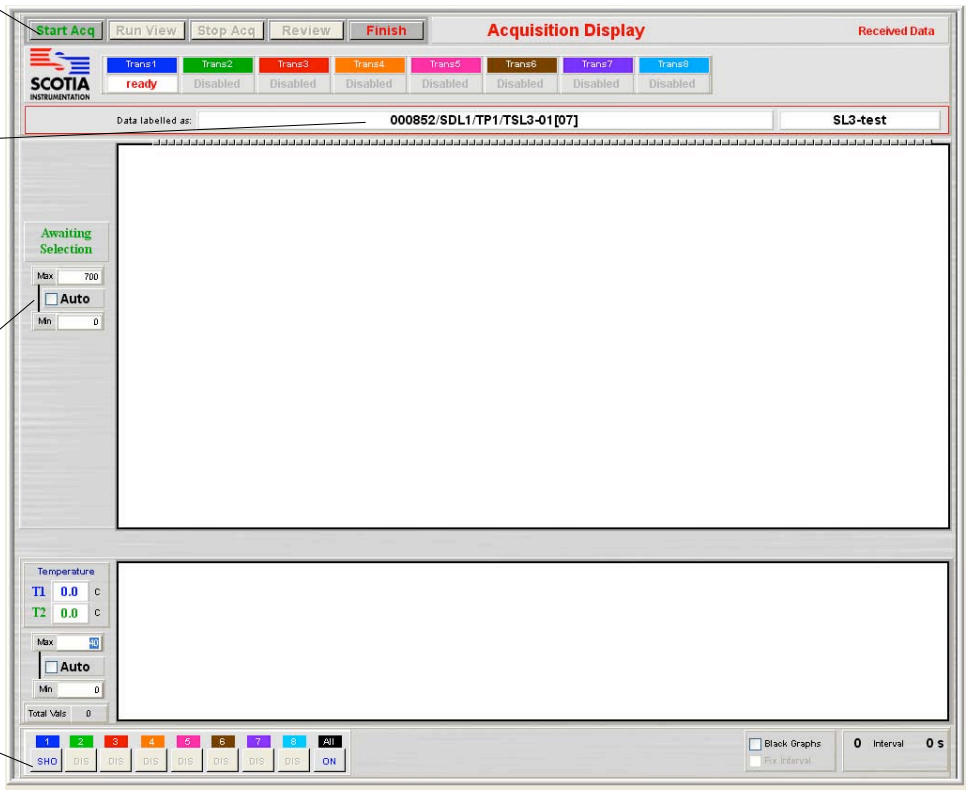
The serial number of the probes are loaded from the equipment file in the SDAS-5 program database as stored in Temp Probe 1 and Temp Probe 2. They are not loaded from the ScotiaLogger3. These should correspond to the probes used in those locations in the ScotiaLogger3

When View + Load is clicked the following screen appears

Click Start Acq to start the import of the data from the chosen file in the ScotiaLogger3

The data is labelled as set in the previous screen by the user and the file number is added to the end in [07] brackets

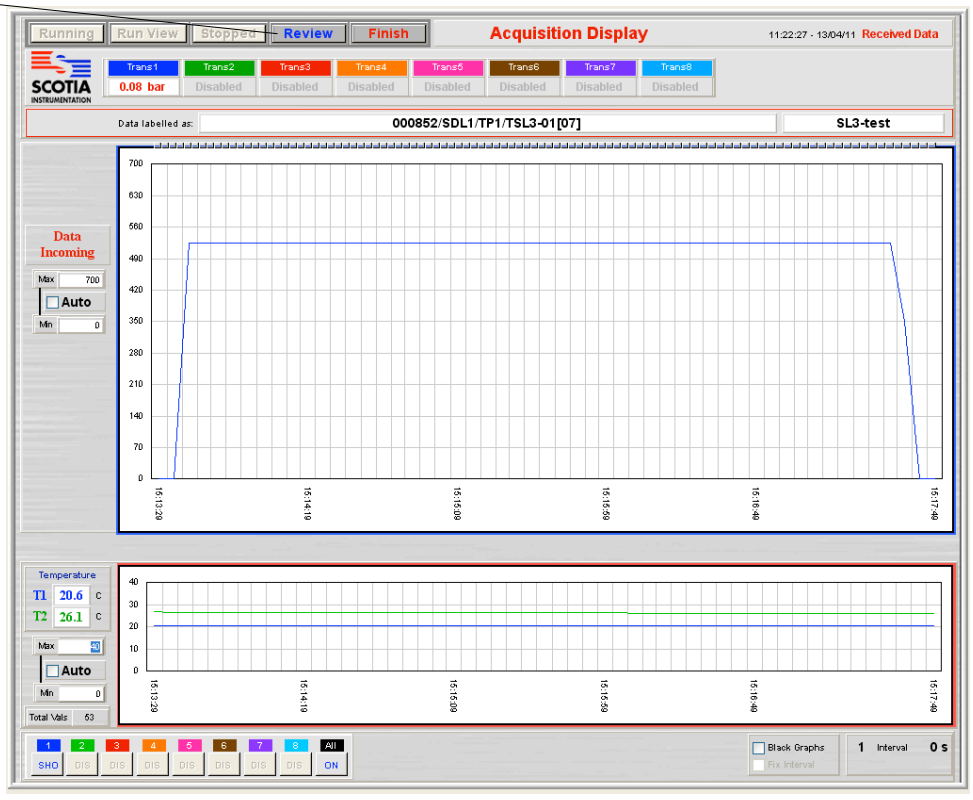
The range is set by the ScotiaLogger3 data being imported



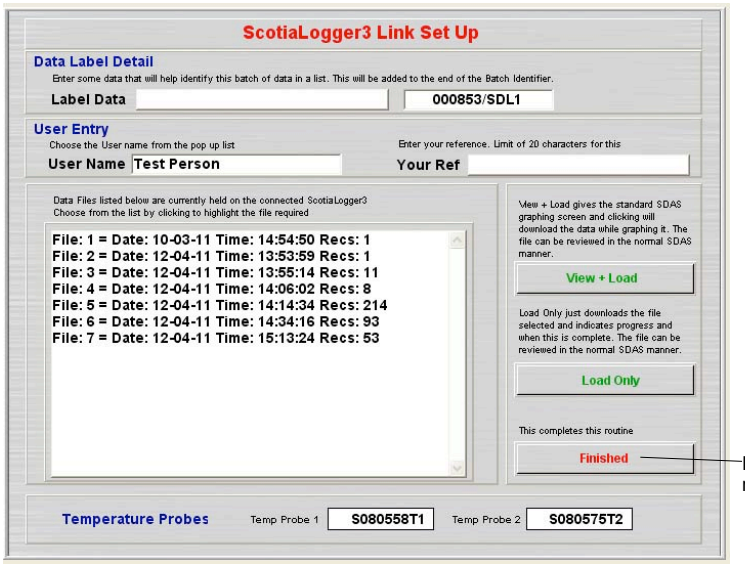
Since the ScotiaLogger3 only has one 4-20mA input only one channel is active

The file is then imported and shows graphing as it arrives. Importing stops at the end of the chosen file. The data is now saved in the SDAS-5 database

Review operates as the Review button in the normal SDAS-5



Clicking Finish returns to the import screen to allow another file to be imported. Enter the Label and reference data and select another file for importing or click Finished to end this routine.



Finished completes this routine

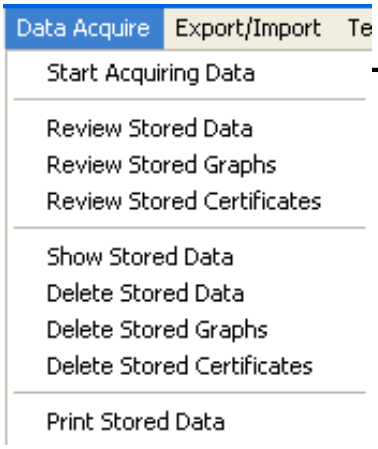
SUDS

The Scotia Underwater Datalogger System (SUDS) device is a logger system designed to operate at low power and be housed in a subsea enclosure pod although it can be deployed elsewhere. It can have five 4-20mA inputs, 1 pt-100 temperature input and 3 flow inputs. When the data is gathered by the device it is stored in files which are displayed to the SDAS-5 software for downloading. The user can download as many files as they require. Note that the SDAS-5 program supplied with a SUDS is matched to the device. If the SUDS serial number does not match that stored in the SDAS-5 program then you cannot proceed to gather data. The transmitters used by the SUDS must also be included in the equipment data file of the SDAS-5 program otherwise the SDAS-5 Review system cannot determine the range of transmitters. Failure to do this will result in warnings that the ranges may be incorrect.

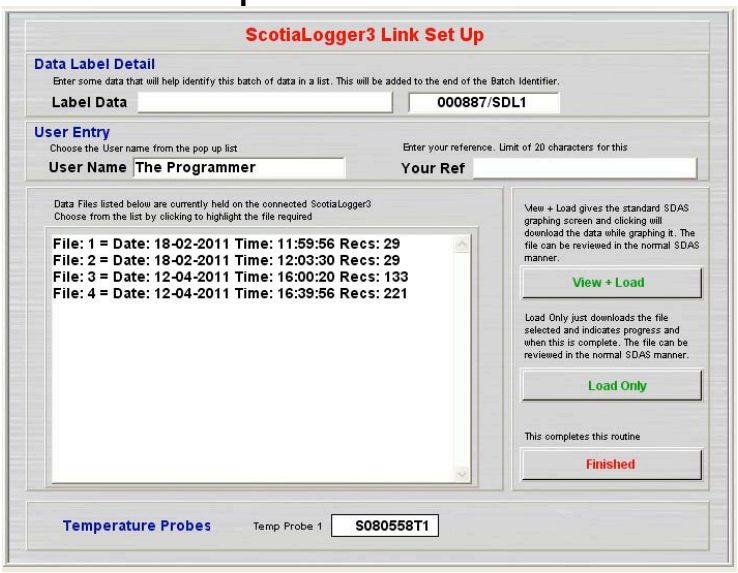
Select from the menus along the top of the screen.

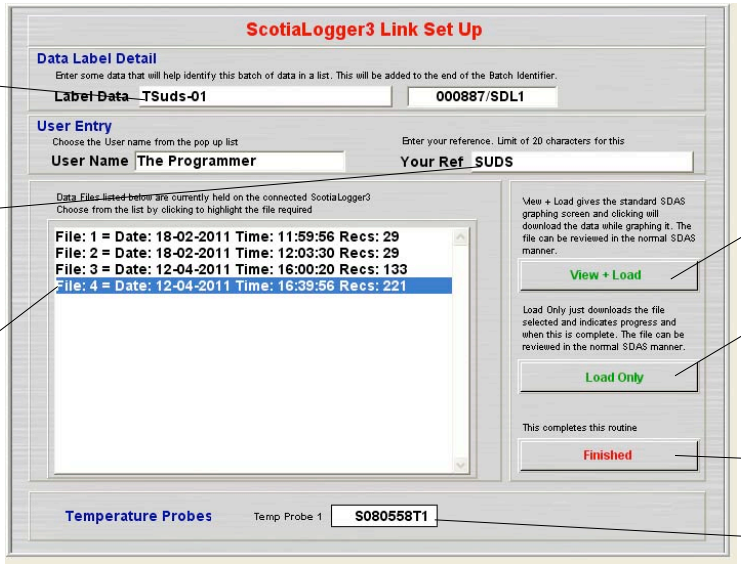
Start Acquiring Data

This is the routine that acquires data into the SDAS-5 program. The SUDS should be connected to the PC or PC laptop and be switched on before starting this routine.



This screen appears showing the choice of files within the SUDS





Enter the Label to be used for this file download

Enter the user reference to be used for this file download

Select the file to load by clicking on it to highlight it

Click View + Load to select the file to load and open the logging screen

Click Load Only to select the file to load the file into the SDAS-5 database without viewing the download process.

Finished completes this routine

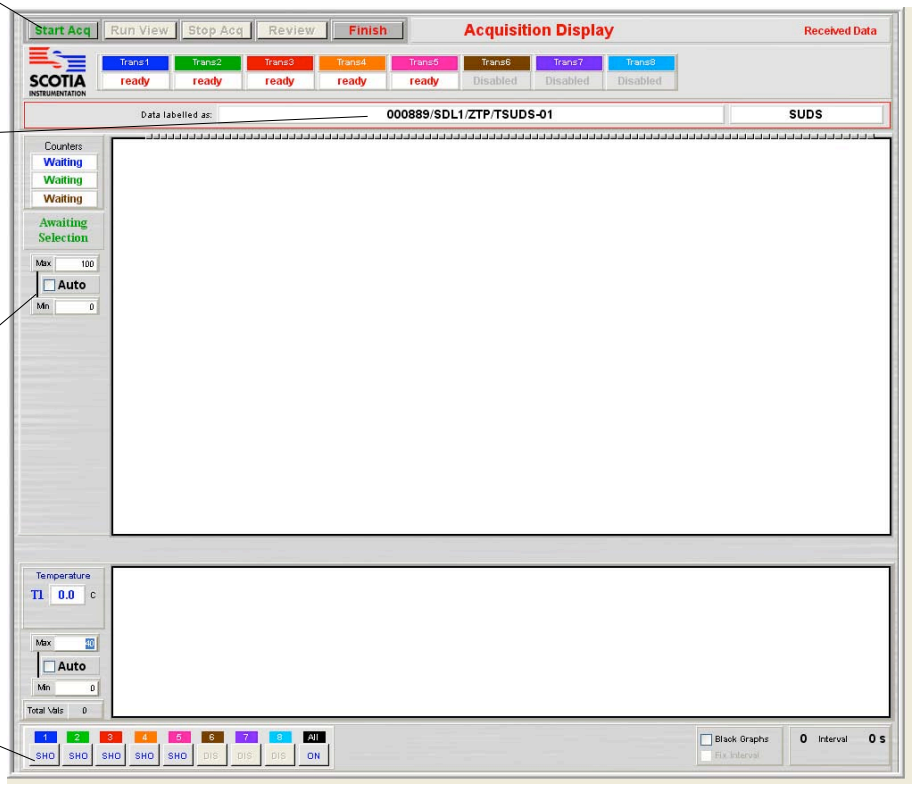
The serial number of the probe are loaded from the equipment file in the SDAS-5 program database as Temp Probe 1. It is not loaded from the SUDS. Check that this is the probe used in the SUDS.

When View + Load is clicked the following screen appears

Click Start Acq to start the import of the data from the chosen file in the SUDS

The data is labelled as set in the previous screen by the user and the file number is added to the end in [07] brackets

The range is set by the SUDS data being imported

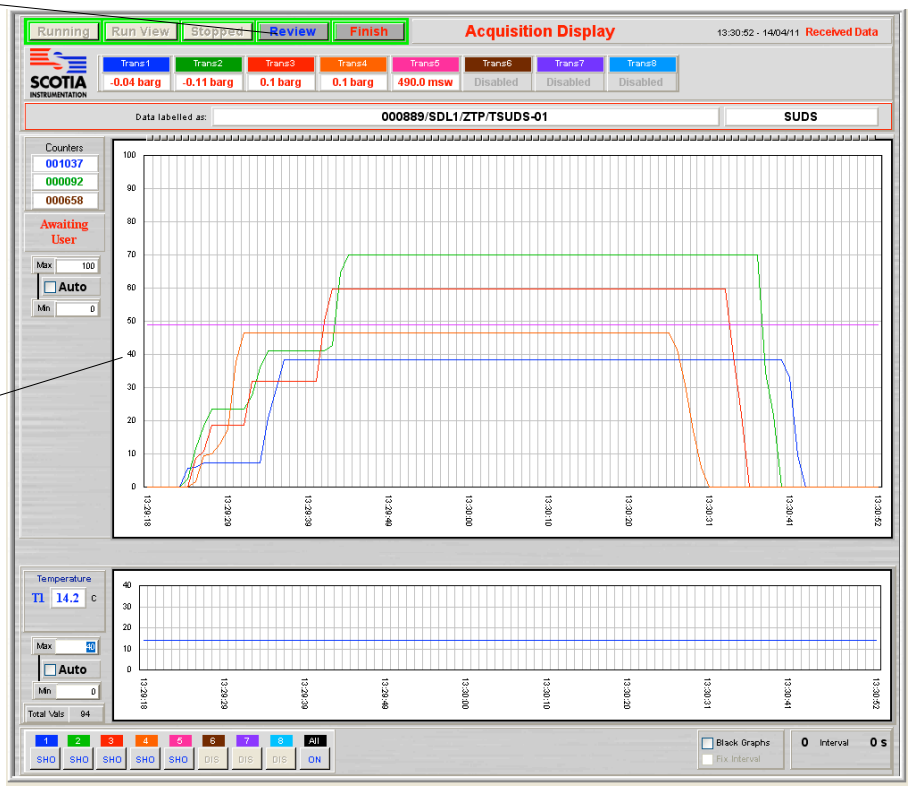


This shows the SUDS active channels

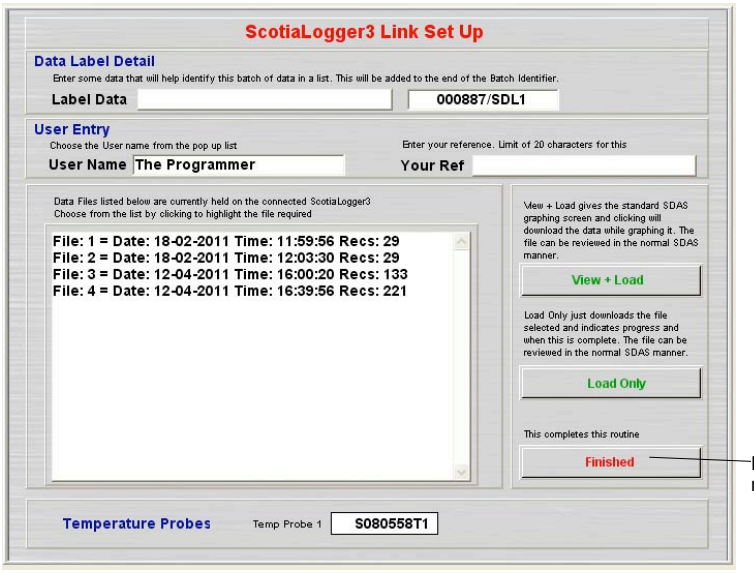
The file is then imported and shows graphing as it arrives. Importing stops at the end of the chosen file. The data is now saved in the SDAS-5 database

Review operates as the Review button in the normal SDAS-5

In this case the units of the graphed values are not all the same so the 0-100% scale shows



Clicking Finish returns to the import screen to allow another file to be imported. Enter the Label and reference data and select another file for importing or click Finished to end this routine.



Finished completes this routine

SDAS Options

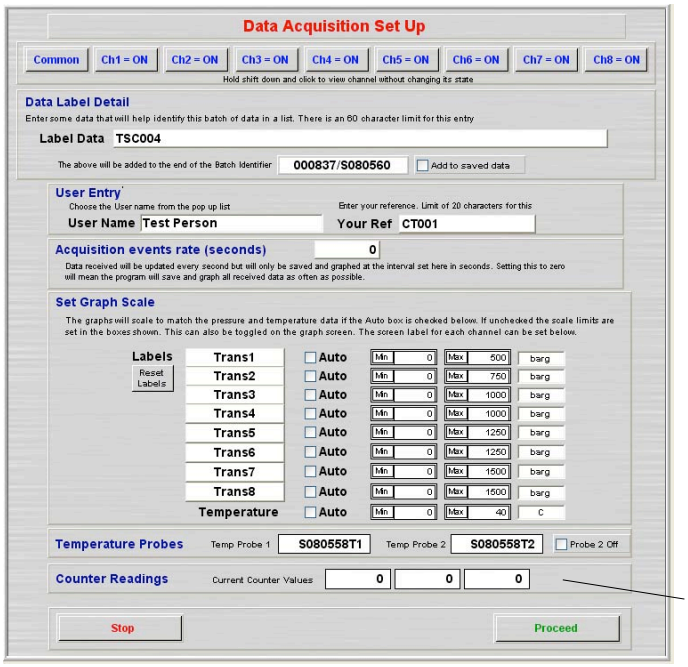
The SDAS system can have various options added to meet customer requirements. The following are the available options at version 5.03. If you have a requirement which is not met by the list of standard options then please discuss this with the technical or sales department at Scotia and we will consider adding your requirements to either a special version or adding an additional option.

Counter Options

This adds a counter option to the SDAS.

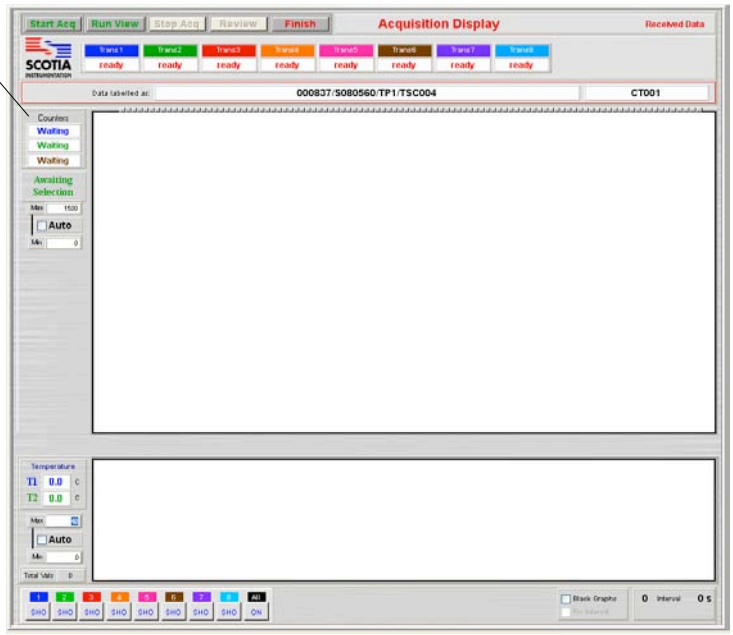
The SDAS-5 can currently have up to three counters fitted.Counters 1 and 3 have no debounce electronic circuitry and so cannot be used to read the switching of a stroke counter mechanical switch. They are designed to work with an inductive sensor used with items such as a mechanical flow meter. Counter 2 has debounce circuitry to enable it to work with a mechanical counter. It is optimised for this and as such cannot accept fast switching.

The following screens show all three counters active. If any are not active then they do not appear on these screens.



With this active the counter section is shown. The counters are zeroed for starting. They appear here for confirmation.

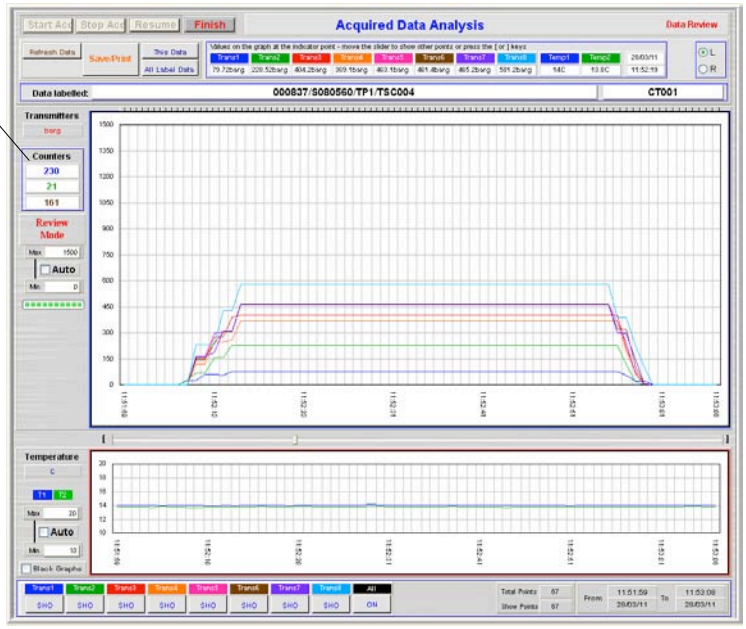
When the Acquisition screen appears the counters appear here and show as Waiting



When Acquisition starts the counters appear here and the values update every second regardless of the logging interval. The values are only logged at the interval.

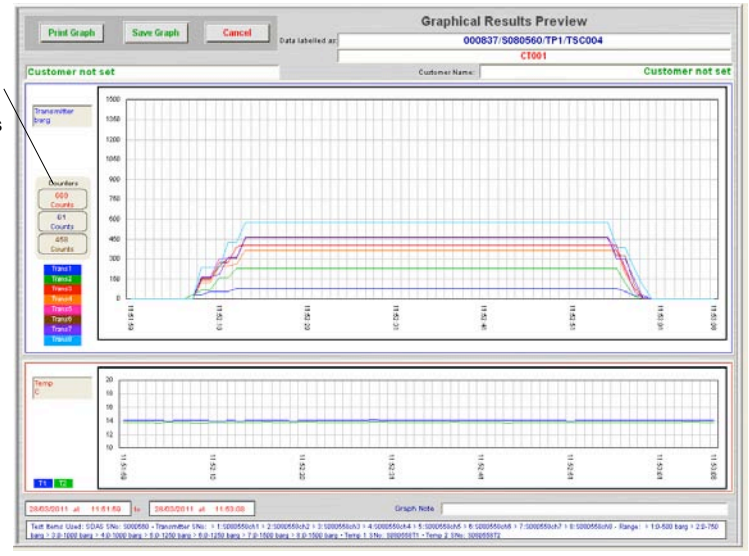
In Review the counters appear here.

Note that in Review the counters show the count difference between the start and finish of the visible graph unless the Data Pointer bar is active (not fully left). If this bar is active then the counters show the count at the position of the pointer bar



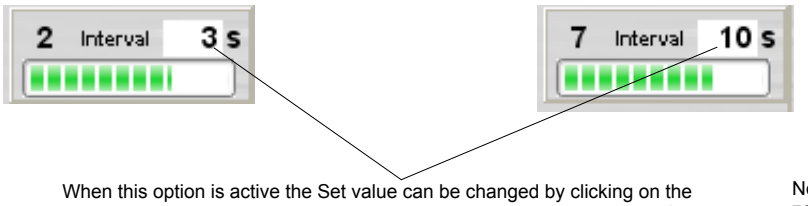
When saving or reviewing Graphical results the counters appear here if active

Note that in Graph the counters show the count difference between the start and finish of the graph showing



Variable Data Rate Option

This allows the user to set the rate at which data is saved to the data file at the start and then change this rate while gathering data. Note that the data will update on screen every second but will be saved to the data file at the rate set. It should also be noted that the time line shows data events and does not alter if you change the time between events. This can be misleading if the user reads the graph time line as linear. The time line is marked correctly and all the data is time and date marked correctly.

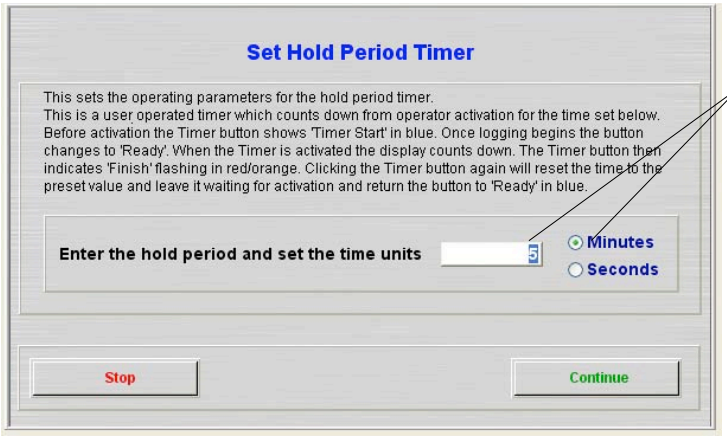


When this option is active the Set value can be changed by clicking on the item and typing a new value in. Note that the entry is live and the rate of data gathering will act on the new value as you type it in.

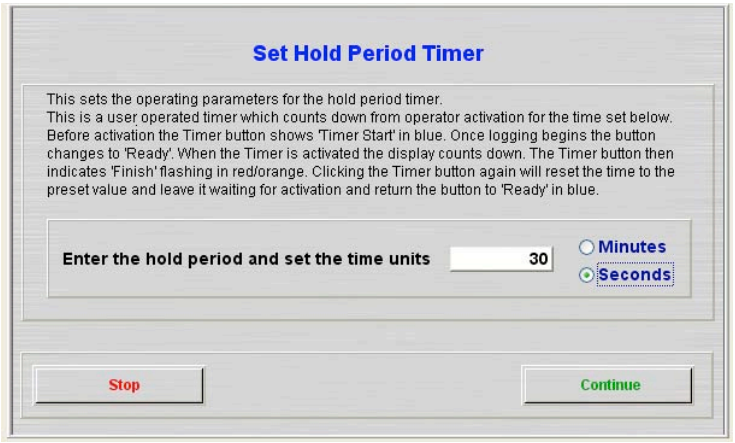
Note: If the data is gathered with zero interval then the interval is inactive for the duration of the test

Hold Period Timer Option

This is a stopwatch option which allows the user to time any event in a countdown mode. The user sets the period of countdown at the start of the acquisition sequence. At any time the countdown can be started. When the time has elapsed the timer shows ‘Finish’. The timer can be reset at any time and the countdown restarted. When the data acquisition is stopped the timer countdown also pauses and restarts when the acquisition restarts.



Enter the hold period in minutes or seconds and check the time units button



Setting to 30 seconds would look like this

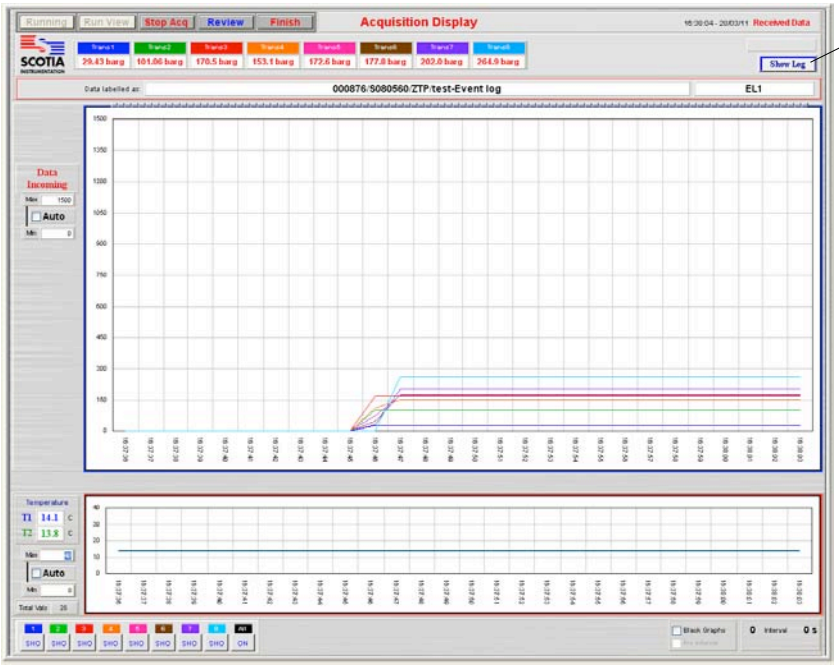
With this option activated this button appears. Click this button to activate the timer countdown

When the timer has been activated the button changes to counting down the time to the finish. If clicked again it then resets the Hold Timer

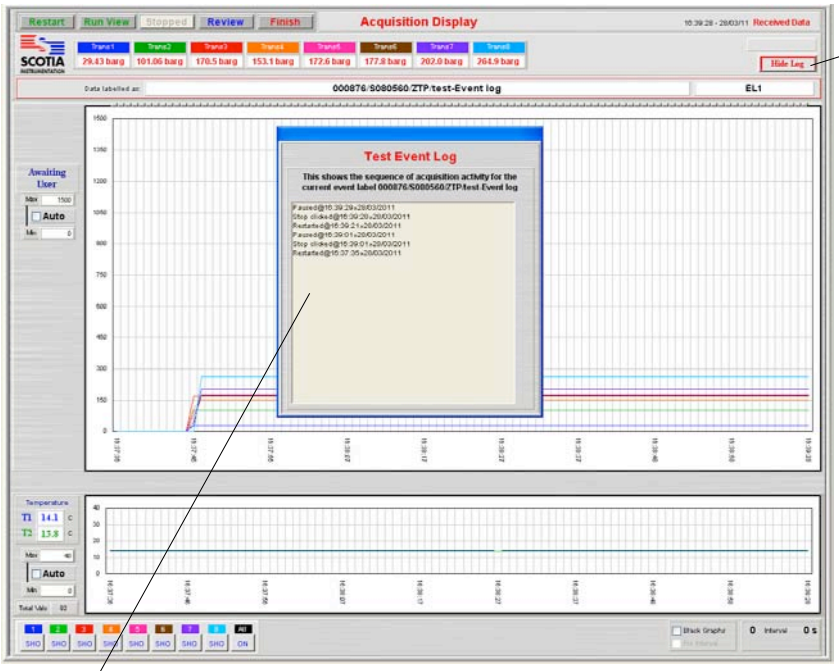
When the timer finishes counting down it changes to Finish and flashes red and orange

Test Event Log Option

This option allows the user to view events that have happened during an Acquisition. Most buttons are reported to this log. This can allow the period of the Acquisition to be checked for any events which might compromise the continuity of the test.



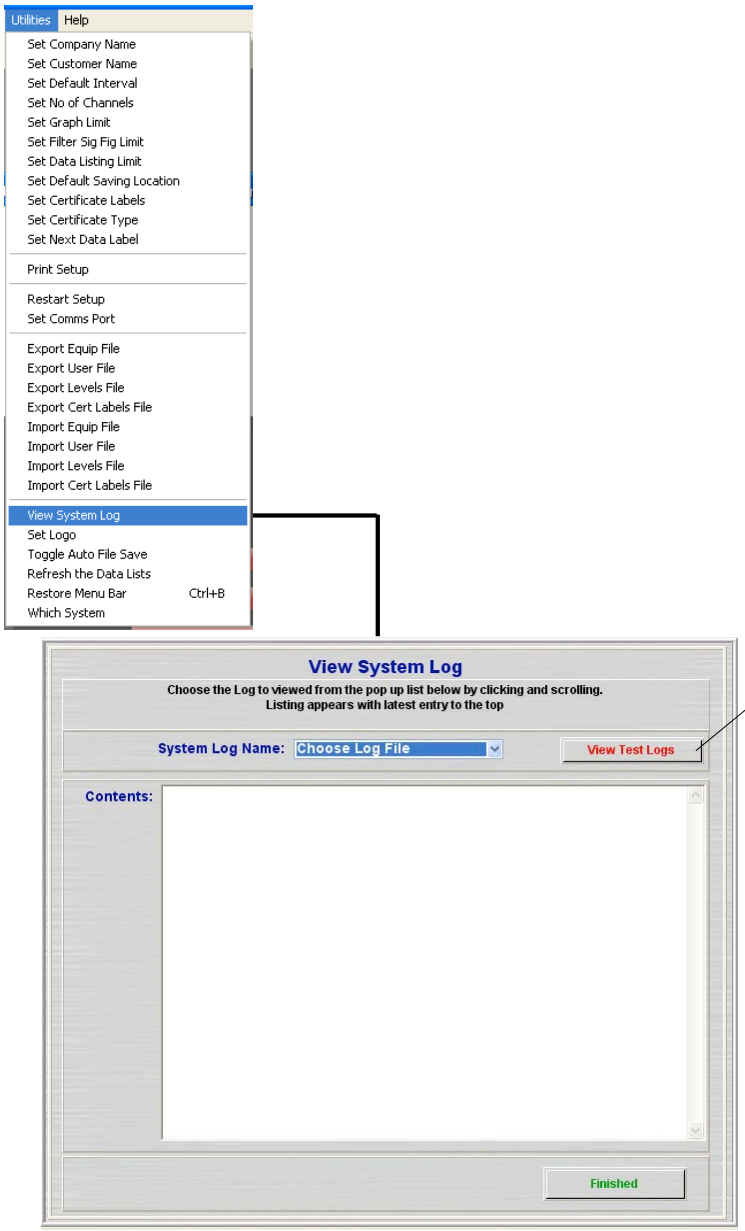
The Show Log shows when this option is active. Clicking this displays the event log screen.



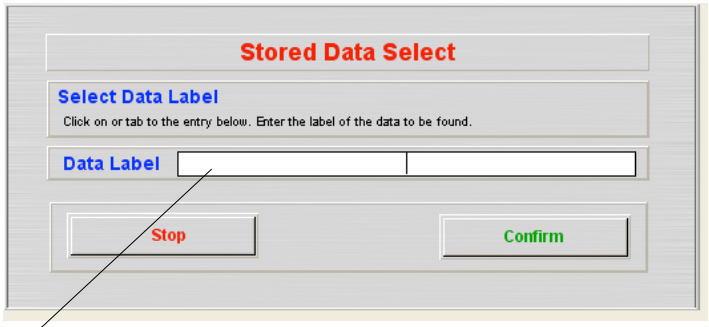
When activated the button changes to 'Hide Log'. Clicking this button again hides the Log screen.

When this log screen is visible it is totally inert. It merely blocks the view of the screen under where it is sitting. It can be moved about the screen by clicking on the top bar and holding the mouse down as it is dragged. Acquisition is not affected by the appearance of this log screen. The log screen is removed by clicking the Hide Log button or stopping acquisition. Event data is added to the top of the log file. The log window closes after 30s.

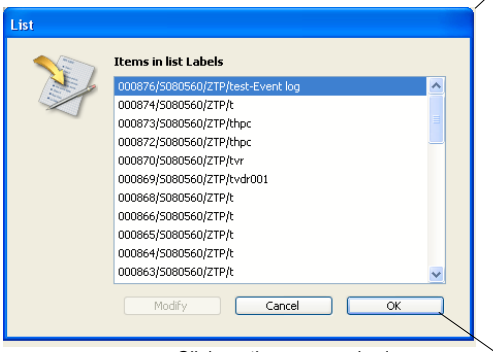
After acquisition has finished the event log can be seen from the Utilities menu - View System Log.



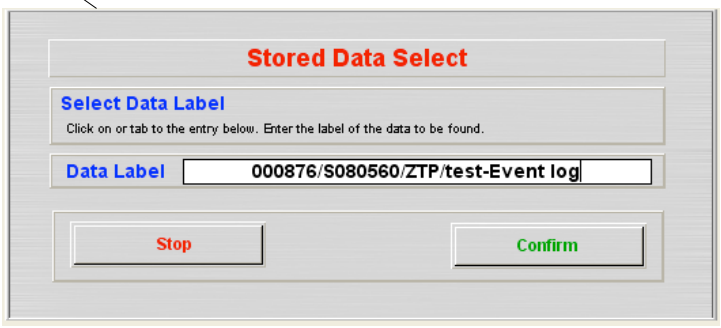
When this option is active this button appears on the View System Log screen. Clicking this button brings up a file selection screen.



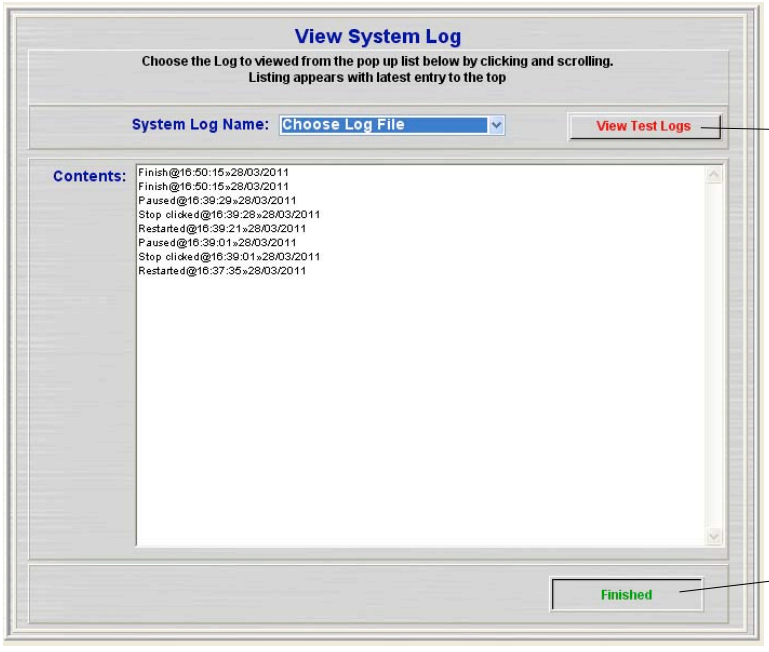
This pick list appears



Click on the one required and then click OK to select this choice.



Confirm to proceed to see the log file



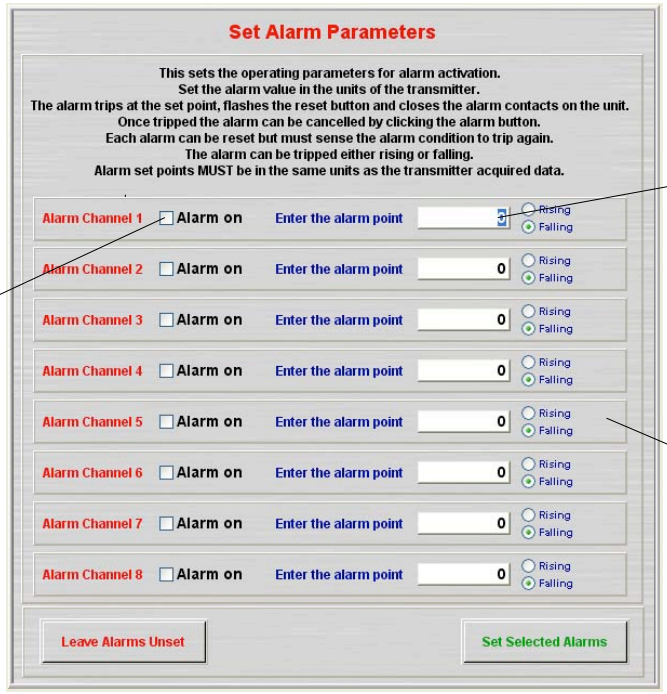
More logs can be viewed by repeating this routine.

The log file for that data file then appears. Note that it is listed with the newest data to the top.

Click to end this routine

Alarm Option

This option allows the user to set an alarm for each channel of the SDAS transmitter channels. The alarm is not only announced visually on screen but the SDAS unit also closes a relay with volt-free contacts. This can be connected to an external alarm system. Note that there is just one alarm switch and it will go into closed mode and stay closed while any of the alarms are active. Each of the alarms can be triggered in either rising or falling mode. In rising mode the alarm is triggered when the value of the transmitter rises above the set value. The alarm stays triggered until it is reset or the acquisition is stopped. When in falling mode the alarm is armed when the value of the transmitter rises above the set value and then is triggered when the value drops below this value. Each alarm can be cancelled separately. If the acquisition is stopped then this cancels all alarm modes. Each alarm can be cancelled and reset separately.

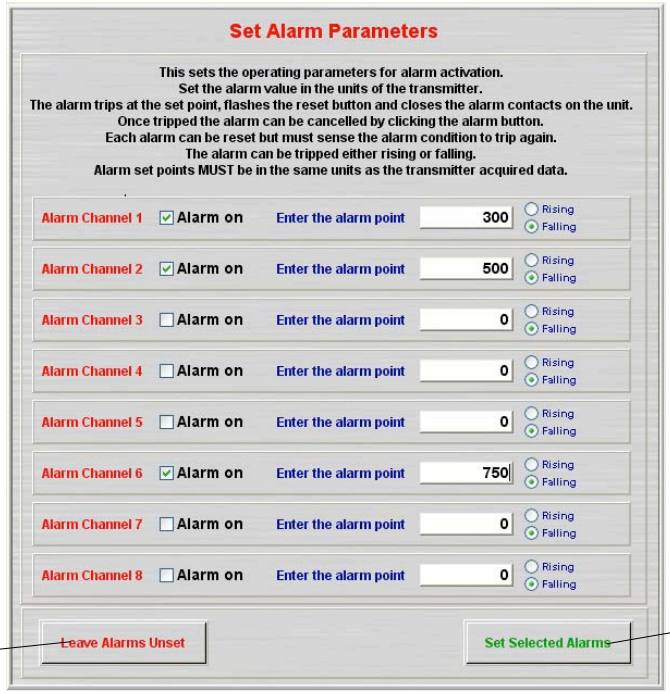


Check or uncheck these to turn each alarm on or off

The value becomes enterable when the alarm is turned on by checking the Alarm on box. Enter each active alarm's value in the units of the transmitter used.

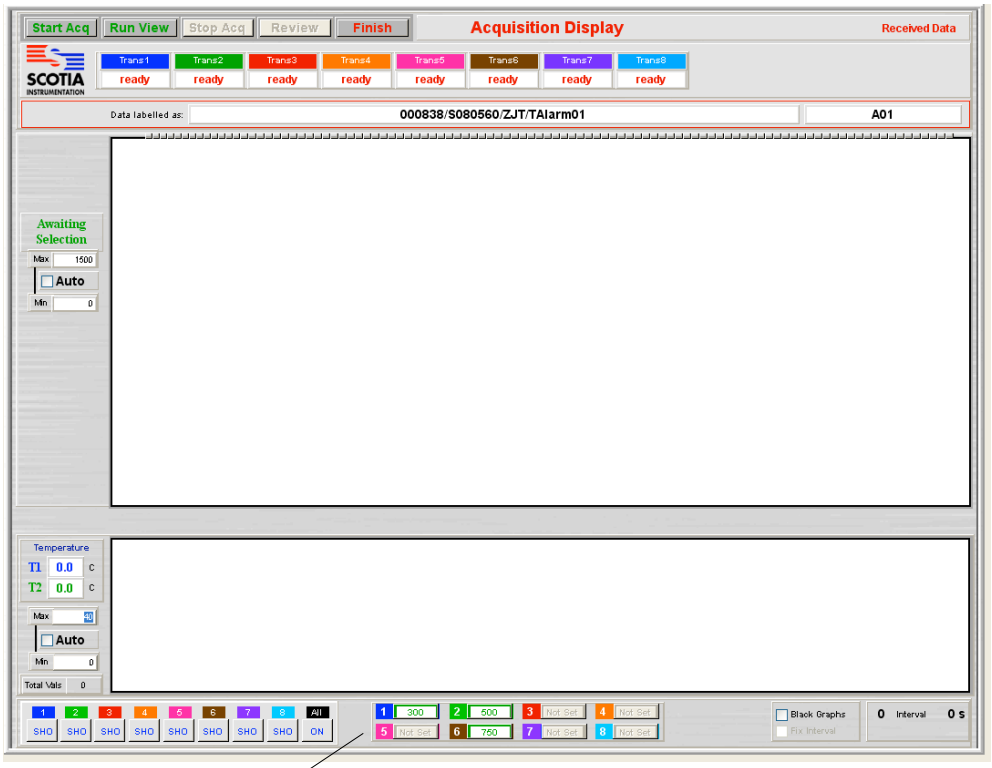
Toggle these to select rising or falling alarm

In this case alarms for channels 1 2 and 6 are set to falling alarms and alarms for 3 4 5 and 8 are not set

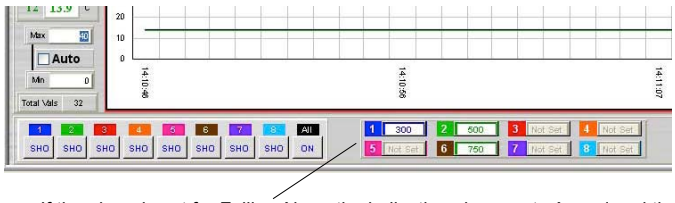


This proceeds with all the alarms unset

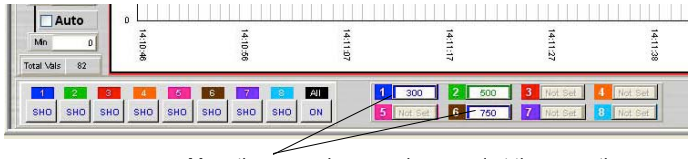
This confirms the alarms as set



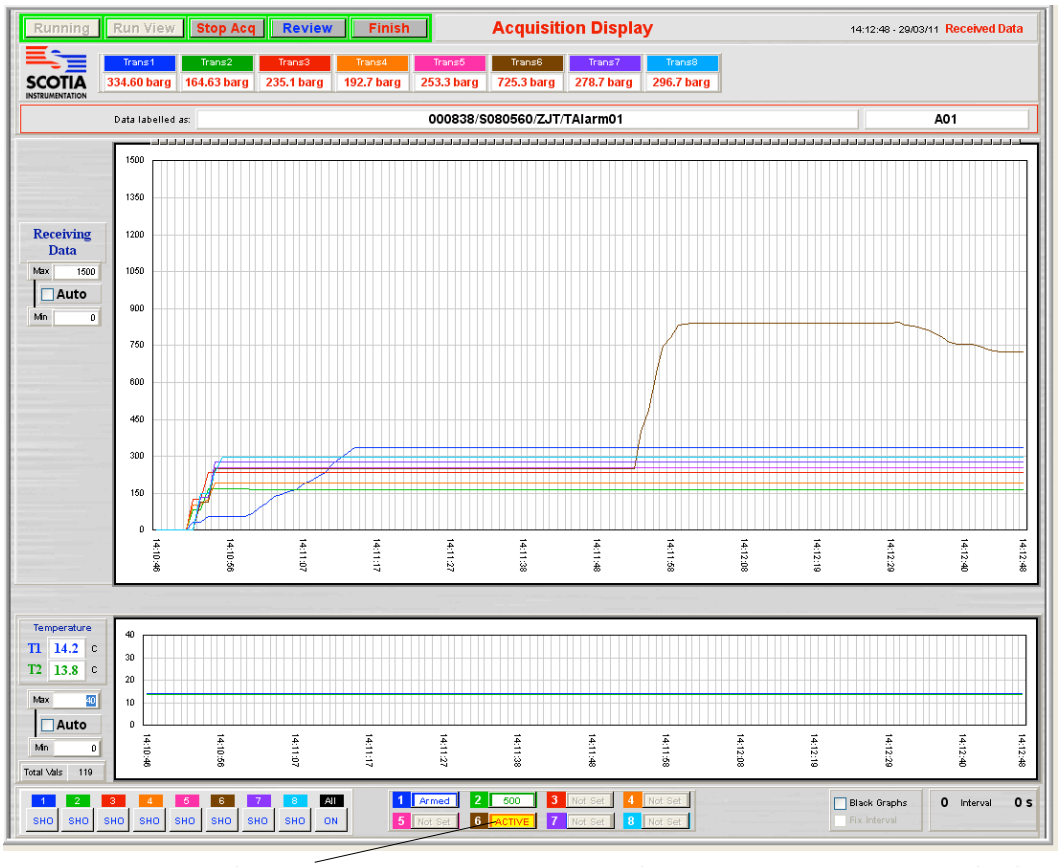
When the acquisition starts the state of the alarms for each channel are shown here numbered and colour coded to the channel graph. Those set have their set value indicated in green. Those not set have 'Not Set' showing and are disabled.



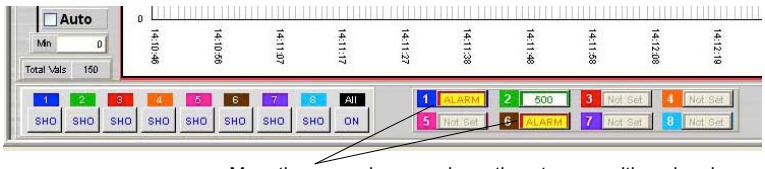
If the alarm is set for Falling Alarm the indication changes to Armed and the set value in blue flashing alternately. If the data acquisition is stopped this setting is held waiting for acquisition to restart. If the button is clicked then this cancels the alarm arming and it changes to Set Off. Clicking it again resets alarm to its initial state allowing it be triggered again. Note that the value needs to pass through the trigger point for the alarm to become active.



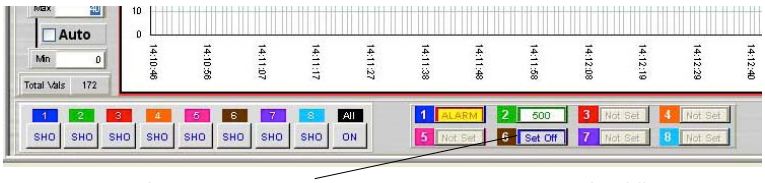
More than one alarm can be armed at the same time.



Channel 6 is now in alarm and shows ALARM ACTIVE alternately in red on yellow. The SDAS also activates it internal alarm switch which can be wired to an audible or visual externally powered system.



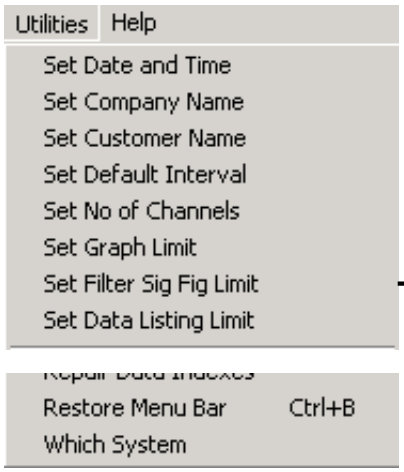
More than one alarm can be active at once - although only one external alarm can be connected. The alarm switch is held active until all the alarms are cancelled.



If an alarm button is clicked when in alarm it goes to Set Off. When clicked at Set Off it then resets to Reset if acquisition is currently stopped and the set point in green if the acquisition is running. If clicked again it changes to Set Off. When at Reset it changes to the set point in green when acquisition restarts.

When acquisition stops any active alarms are set to Set Off and the internal alarm switch sets to off.

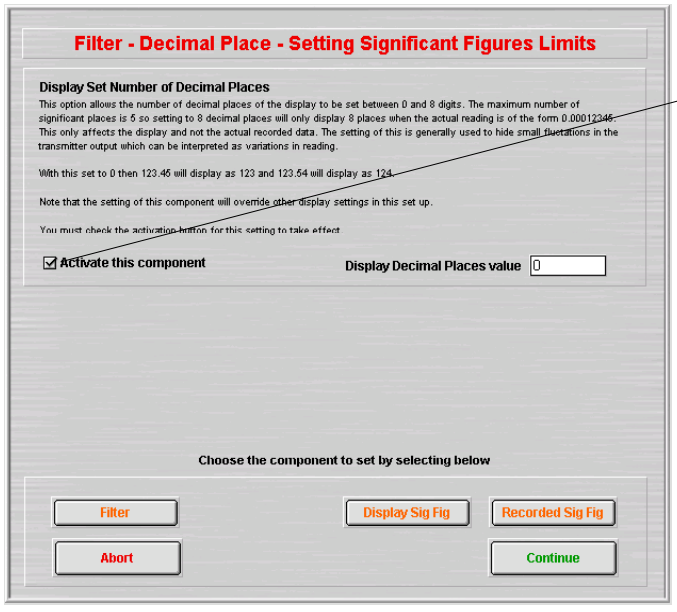
Set Filter Sig Fig Limit Option



When this option is active it allows setting of various display and acquisition significant figures.

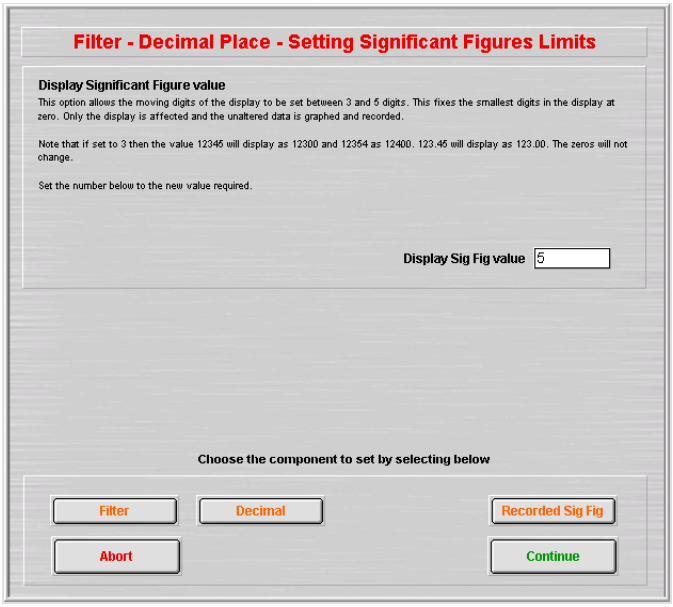
This option allows the readings received to be filtered by averaging over the number of values set. This just affects the visual display. Values stored are as received. Fluctuating values due to process can be steadied with this option but leaving this on during a period of rising or falling readings will cause the shown value to lag behind the actual changing value. To overcome this the option is toggled to off when the acquisition screen appears and must be toggled on to activate it. It can then be toggled off again if required. A value of 1 entered as the filter value is the equivalent of turning the option off.

Selecting Decimal leads to this screen



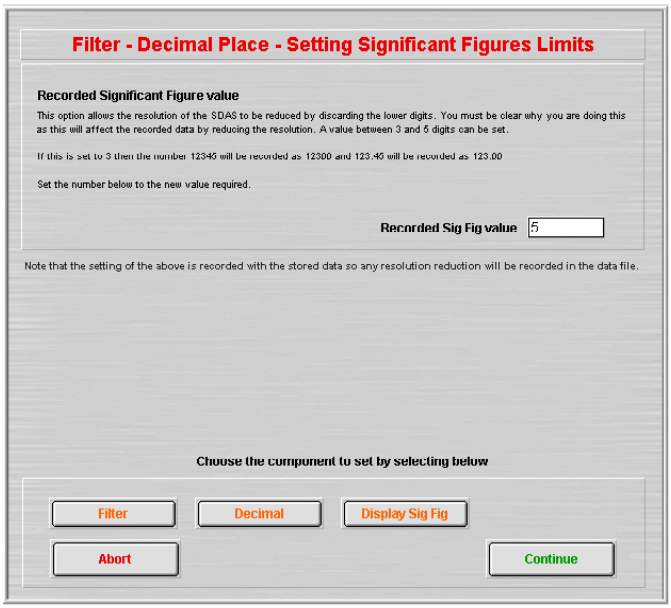
This option allows the number of decimal places to be set for the displayed readings. This just affects the visual display. Values stored are as received. You must check the box to activate this option.

Selecting Display Sig Fig leads to this screen



This option allows the significant figures of the displayed values. This just affects the visual display. Values stored are as received. As shown the value of 12345 will display as 12300 if 3 is entered for the significant figures here. Since 5 is the normal significant figures displayed in the SDAS then setting 5 is the equivalent of turning this option off.

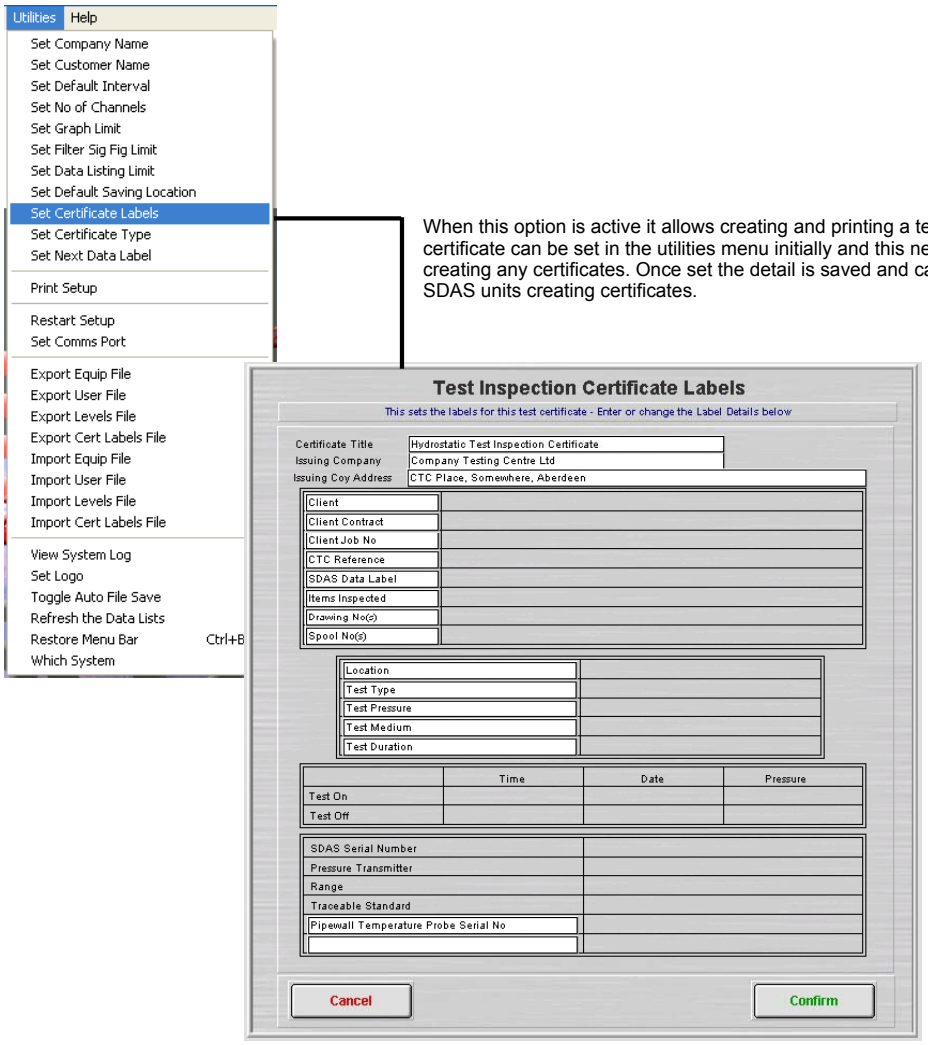
Selecting Recorded Sig Fig leads to this screen



This option allows the resolution of the SDAS to be reduced not only in the display but in the recorded values too. Note that this affects the stored values. You must be clear why you would want to do this. The value of 12345 will display and be stored as 12300 if 3 is entered for the significant figures here. 123.45 will display as 123.00. Note also that in order to protect the integrity of the SDAS data gathering the stored data event will note any altering to the received values made in this way. Since 5 is the normal significant figures displayed in the SDAS then setting 5 is the equivalent of turning this option off.

Certificates Option

Set Certificate Labels



When this option is active it allows creating and printing a test certificate. The labels of the certificate can be set in the utilities menu initially and this needs to be set by the user before creating any certificates. Once set the detail is saved and can be exported for use by other SDAS units creating certificates.

Each of the areas with a white background can be set to any typed entry. These labels appear in the certificate against data entered.

This gives a versatile certificate labeling system that will allow changes as the user requires within the constraints of the overall certificate system.

The labels are saved with the certificate so future changes to the labels will not be reflected in previously saved certificates.

Creating Certificates

When this option is active it allows creating and printing a test certificate. The labels of the certificate must be set in the utilities menu initially and this needs to be set by the user before creating any certificates. The labels are saved with each certificate so changing the labels for later certificates does not alter the saved form of previous certificates.

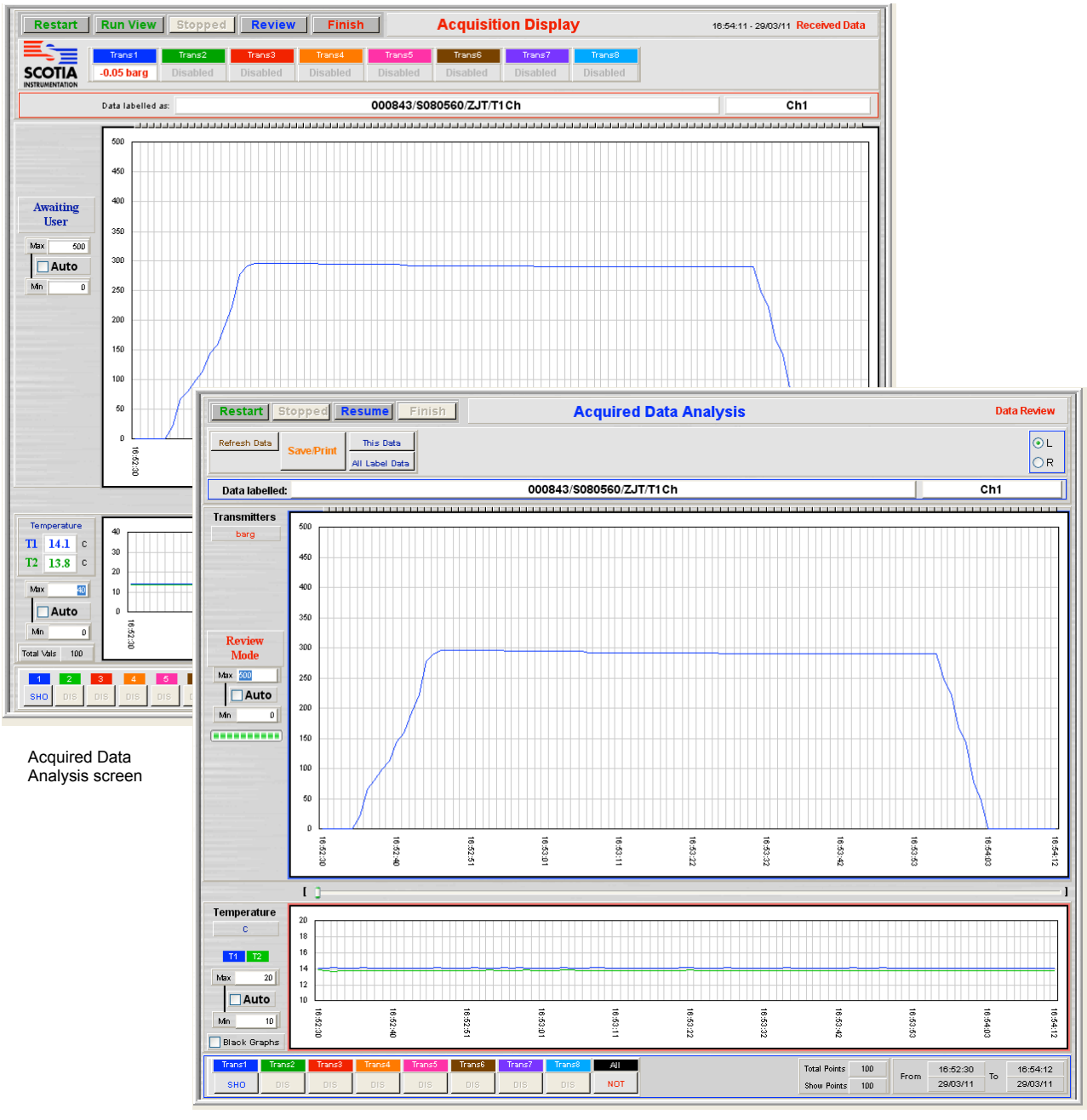
The certificates are linked to a test being performed using the SDAS. In order to utilise some of the data from the saved test the certificate creation is not called from a menu item but from within the Review of the test data.

To create a Certificate the user enters Review of the stored data either from the Review button on the Acquire routine or from Review Stored Data menu item. Choose the part of the graph area which represents the period of the test - e.g. the hold period - and then choose Save/Print.

Enter Review of Data - find your test and display all the test and then reduce the test period to the period over which you are issuing the test certificate using the trimming bar or the Data buttons. If it is a hold test then choose the start and finish of the hold period.

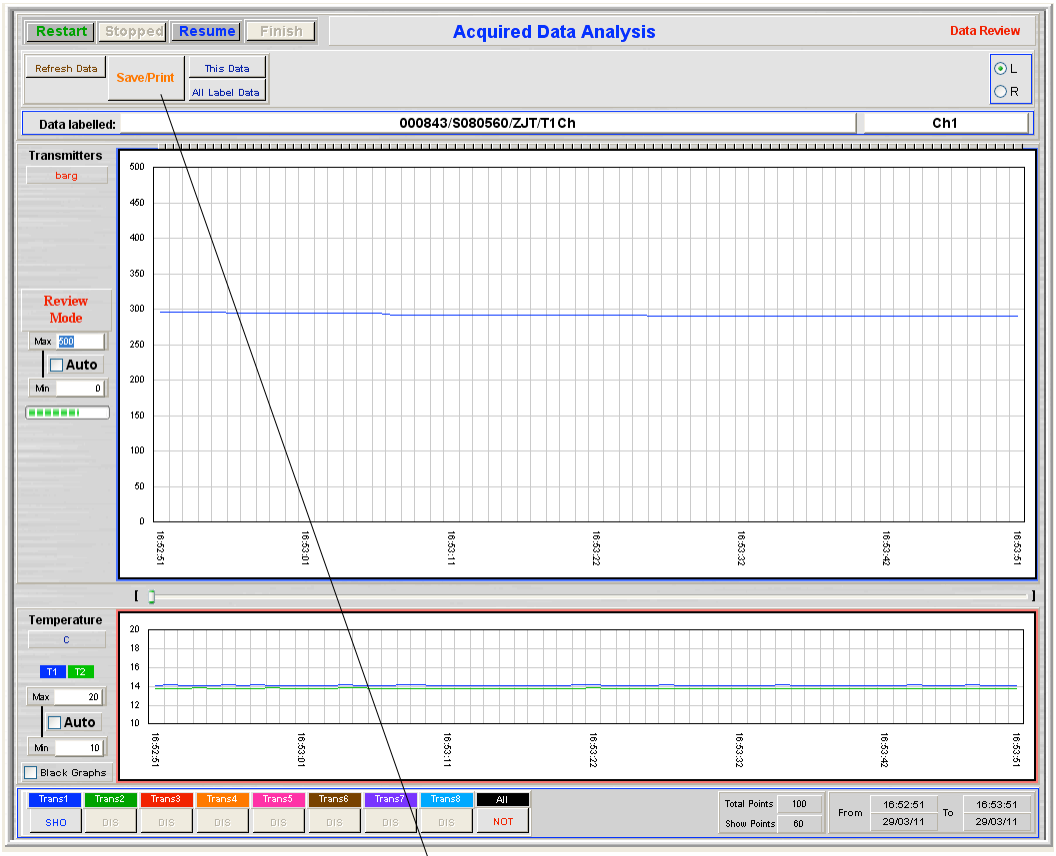
Note: Currently the certificate routine only works for Graphs with just one graph line. You must choose to show just one graph line before proceeding to save the Graph and the Certificate. Multi line graphs can be used but a certificate can only be produced for one line on a test. You MUST reduce the graph to the line and section of it that you wish to use before clicking Save/Print.

Data gathering



Acquired Data Analysis screen

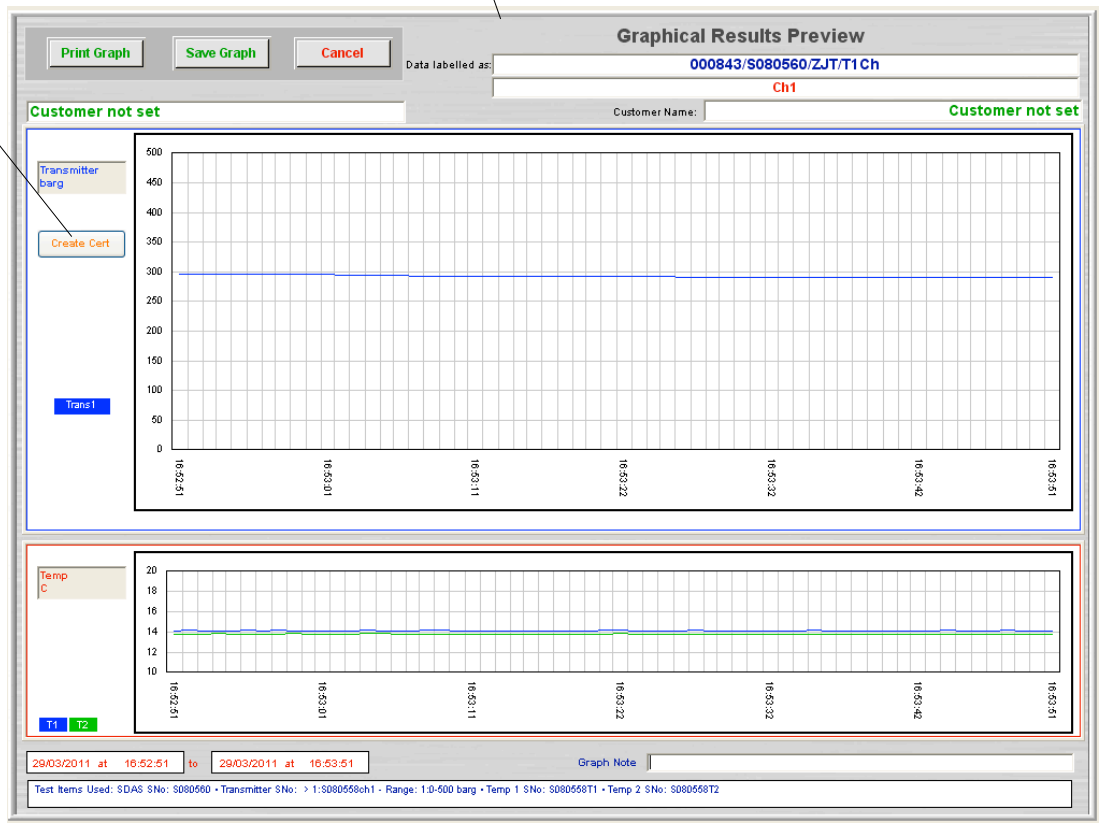
Reduce the test period to the hold period



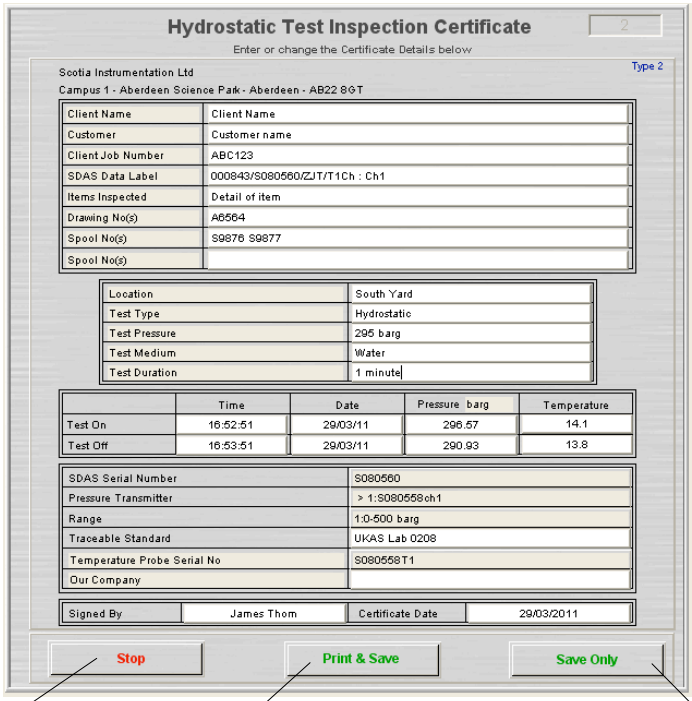
Choose Save Graph

This must be a single line graph for Certificate creation

Choose Create Cert to proceed to create a Certificate.



Note that if you have not created the Certificate Labels at this stage then you cannot proceed. If you have a Certificate already created for this Test then this button shows Modify Cert. You can only have one certificate for each test.



The Client, Test No, and Test On and off times and pressures are pre-filled taken from the ends of the graph defined by the user.

The test equipment detail, user and current date are also prefilled.

Other detail needs to be filled by the user.

Data with a white background can be altered by the user.

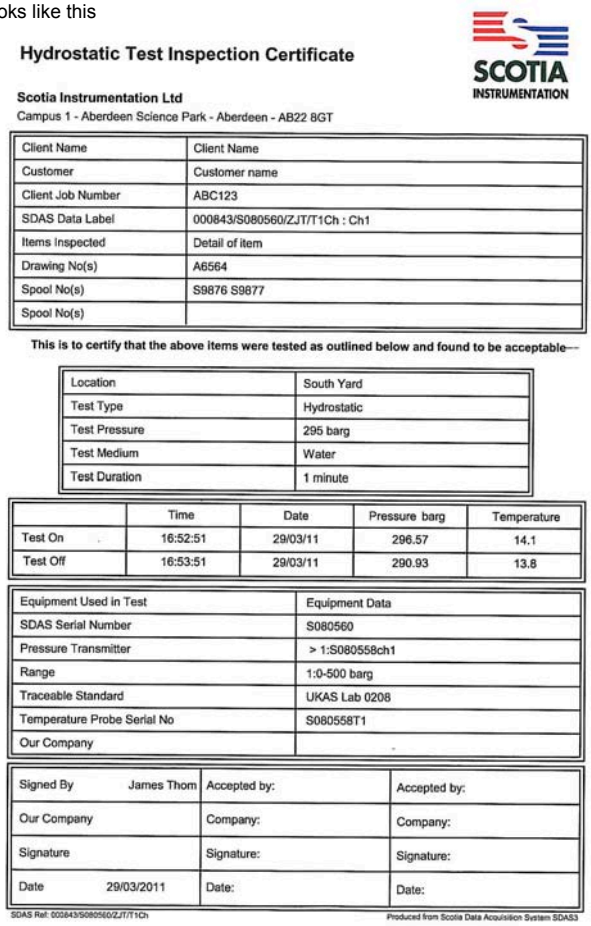
This does not save the data entered

This brings up the normal print dialogue before printing and then saves the data entered in the Certificate file. The print is in the form shown as follows

This saves the data entered in the Certificate file

The printed certificate looks like this

The test certificate prints out on A4 paper



Hydrostatic Test Inspection Certificate

SCOTIA INSTRUMENTATION

Scotia Instrumentation Ltd
Campus 1 - Aberdeen Science Park - Aberdeen - AB22 8GT

Client Name	Client Name
Customer	Customer name
Client Job Number	ABC123
SDAS Data Label	000843/S080560/ZJT/T1Ch : Ch1
Items Inspected	Detail of item
Drawing No(s)	A6564
Spool No(s)	S9876 S9877
Spool No(s)	

This is to certify that the above items were tested as outlined below and found to be acceptable

Location	South Yard
Test Type	Hydrostatic
Test Pressure	295 barg
Test Medium	Water
Test Duration	1 minute

	Time	Date	Pressure barg	Temperature
Test On	16:52:51	29/03/11	296.57	14.1
Test Off	16:53:51	29/03/11	290.93	13.8

Equipment Used in Test	Equipment Data
SDAS Serial Number	S080560
Pressure Transmitter	> 1:S080558ch1
Range	1:0-500 barg
Traceable Standard	UKAS Lab 0208
Temperature Probe Serial No	S080558T1
Our Company	

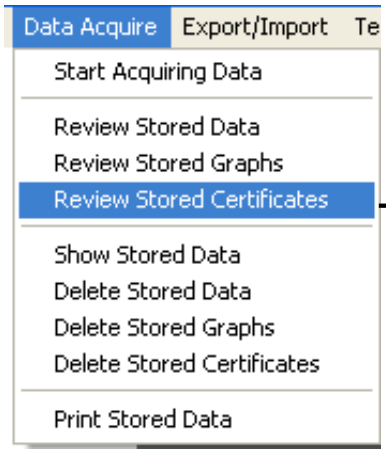
Signed By James Thom	Accepted by:	Accepted by:
Our Company	Company:	Company:
Signature	Signature:	Signature:
Date 29/03/2011	Date:	Date:

SDAS Ref: 000843/S080560/ZJT/T1Ch — Produced from Scotia Data Acquisition System SDAS3

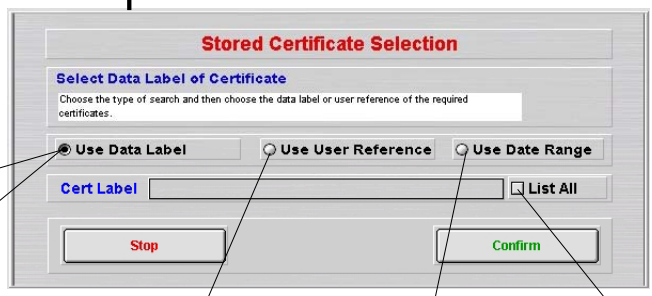
The logo used is set in the Utilities menu

When the certificate is printed or saved the screen returns to the saved Graph screen

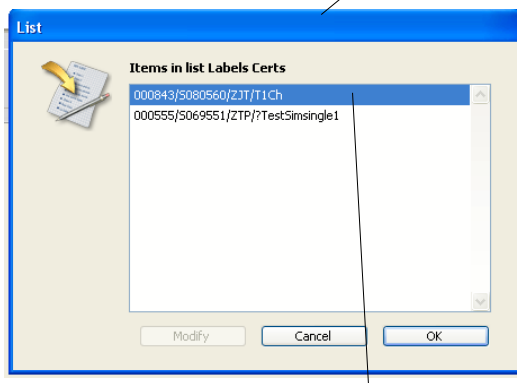
Review Stored Certificates



When this option is active this allows reviewing, amending and printing of a created test certificate.



Choose the search type



This searches for certificates with a user reference. A pop up list of saved user references is displayed

This allows a date or a range of dates to be entered in the form 25/2/11 for a date or 25/3/11-27/3/11 for a range of dates from one to the other inclusive.

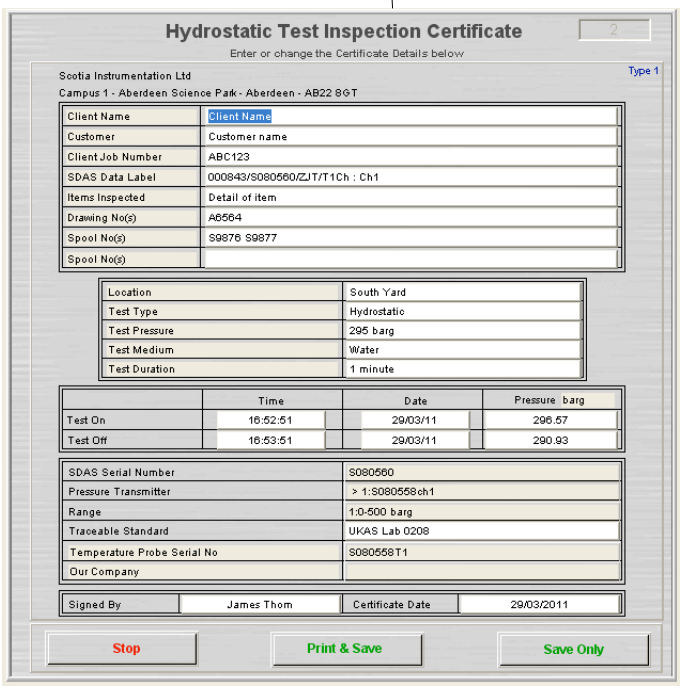
Checking this box selects all the stored certificates

With these three options more than one certificate may be found. In this case a list is then shown. Double click on the item on the list to show the certificate for viewing, amending or printing

Choose from the list presented and click OK to proceed. Only one certificate can be found for one data label

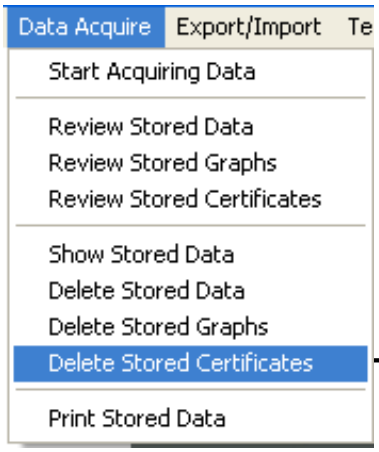
Amend Certificates

Print Certificates



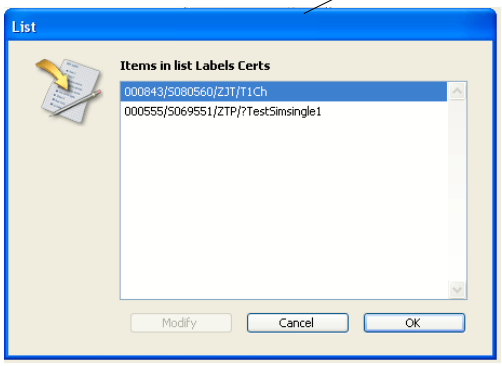
These can be amended and printed from here

Delete Stored Certificates



When this option is active this allows deleting of a created test certificate.

Choose the search type



Choose from the list presented and click OK to proceed.

This searches for certificates with a user reference. A pop up list of saved user references is displayed

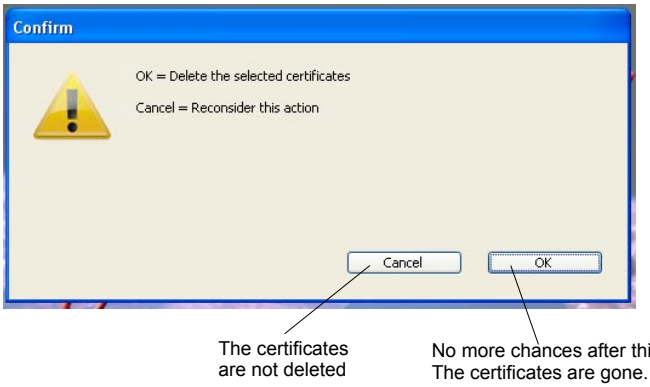
This allows a date or a range of dates to be entered in the form 25/2/11 for a date or 25/3/11-27/3/11 for a range of dates from one to the other inclusive.

Checking this box selects all the stored certificates

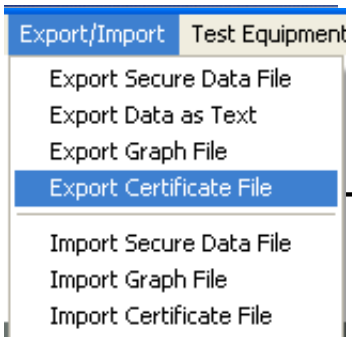
Listing of Certificates for Deletion

A list of the matching certificates is then shown. Double click on the item on the list to show the certificate for viewing. Any left on the list when Continue is clicked will be deleted after confirmation.

You get one final chance to stop the deletion.



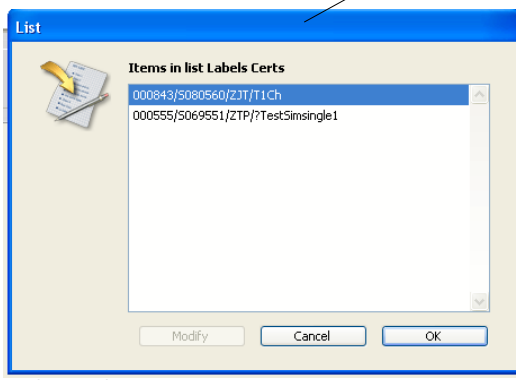
Export Certificate File



When this option is active this allows exporting of a created test certificate.

The certificate data file exported by this routine is in a form that can only be read by the Import Certificate File routine and cannot be viewed or changed by other programs. The certificate file cannot be exported as text.

Choose the search type



Choose from the list presented and click OK to proceed.

This searches for certificates with a user reference. A pop up list of saved user references is displayed

This allows a date or a range of dates to be entered in the form 25/2/11 for a date or 25/3/11-27/3/11 for a range of dates from one to the other inclusive.

Checking this box selects all the stored data

Listing of Certificates for Export

These sort the column above them up or down

This stops this routine

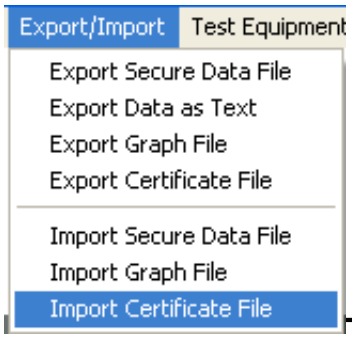
This reduces the selection to only the certificates chosen. Highlight those required by clicking, shift clicking or control clicking

This continues this routine

Note that all the listed certificates will be exported. You need to reduce the selection to the certificates you wish to export.

The standard save dialogue box appears to allow you to navigate to the saving location and name the file being saved. A confirmation screen shows when export is complete.

Import Certificate File



When this option is active this allows importing of an exported test certificate file

The certificate data file imported by this routine is in a form that can only be read by the Import certificate File routine.

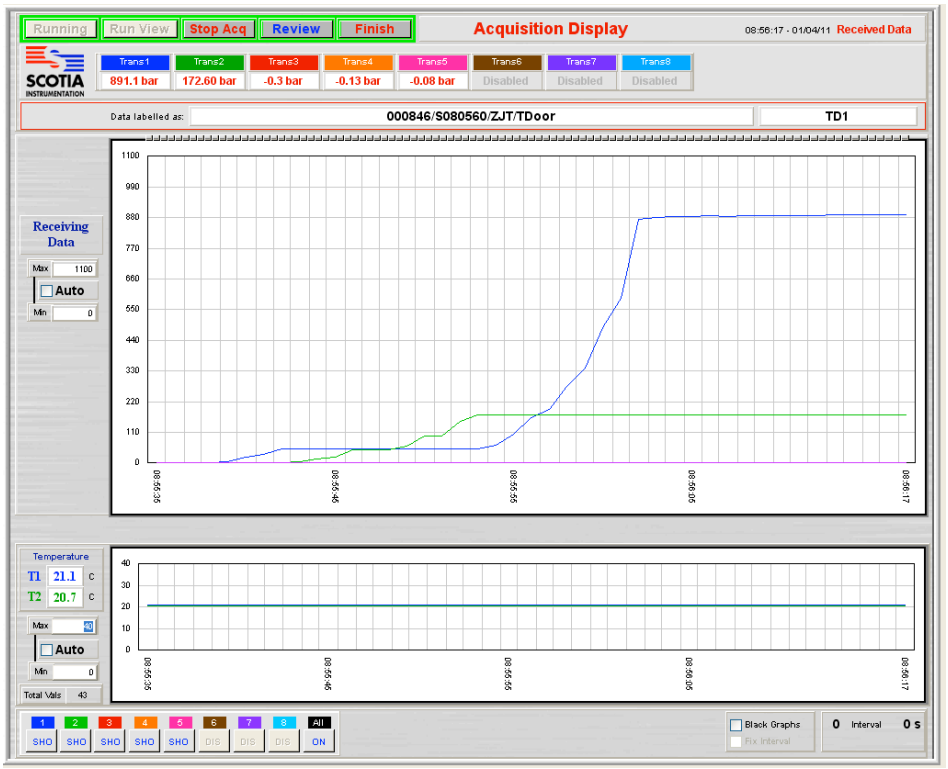
The standard import dialogue box appears to allow you to navigate to the location and name the file being loaded. You must have a naming system that will ensure that you import the correct file. If the file header is incorrect the import will terminate.

No duplicate check is applied to this import as there is no impact on generated displays. A confirmation screen is given to indicate import is complete.

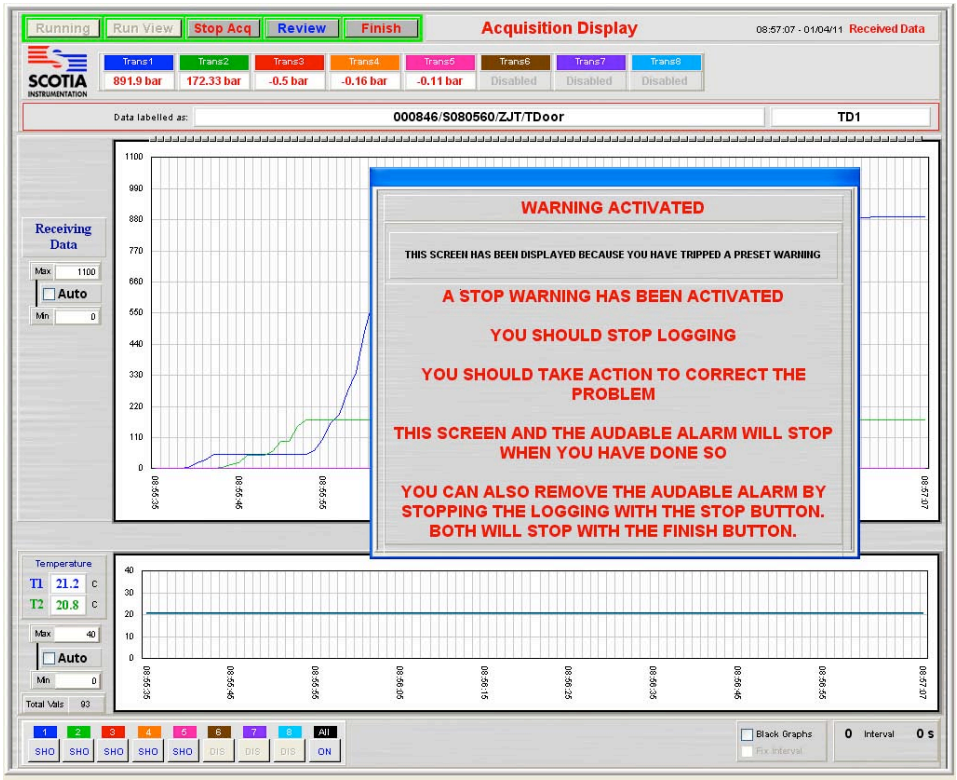
Door Alarm Option

When this option is active this allows a switch to be connected to any function. Initially this was designed to alert the users to the door to the testing bay being open but it could alert the user to any action operating this switch.

When activated while logging, the user is alerted by a screen indication which covers a large section of the logging graph screen. An audible or visual alarm can also be connected to the SDAS-5 which can be used to supplement this warning.



With logging in progress as above, if the door switch goes ‘open’ then this alert appears and an audible alarm sounds



Logging continues while the alarm sounds and the screen alert shows. This alarm is recorded in the Event log. The alarm can be cancelled by closing the door switch. The audible alarm will stop if the Stop Acq button is clicked. The alarm will stop and the screens will close when the Finish button is clicked.

SDAS-5 Hardware

SDAS-5 Unit front

A version is available without the additional screen and another in a rack mount form

SDAS-5 Unit back

Note that all connections below should be made prior to switching the SDAS unit on. The SDAS PC is configured to allow the user a minimum of access. Note that attaching items to ports may cause the PC to attempt to load drivers which it then cannot access. This may cause failure of the internal PC. You should have the SDAS set up to operate with any devices you intend to use by the technical staff at Scotia.

Mains Switch — Illuminated rocker switch toggles mains power on or off

Mains Power — Mains power is supplied to a IEC male socket via the mains lead supplied. Voltage in range 90 to 264 VAC 47-63 Hz. Current in range 1.1 to 2.1A depending on voltage.

Monitor Power — Monitor power is available from this IEC female socket

External Monitor — Connect the 15 way D connector from monitor to this port

Front

USB

USB 2.0/1.1. These ports can be used to attach keyboards, mouse, memory devices or printers. Note that these may have to have drivers installed prior to you plugging them in. The standard SDAS keyboard has a mousepad built in.

Rear

Network

Connect via RJ45 plug to network. Provides LAN connection as NIC 10/100. Note that connection to a network may require some IT input as the standard setup is via DHCP.

TX Fuse

A 200 mA fuse protects the transmitter supply

Alarm

With the Alarm option enabled this LED illuminates when the alarm is triggered

Hard Drive

This LED indicates to indicate internal hard drive activity

A/D

This indicates activity in the data collection microcontroller. When powered up before logging this is illuminated. When gathering and transmitting data it flashes.

Alarm Socket

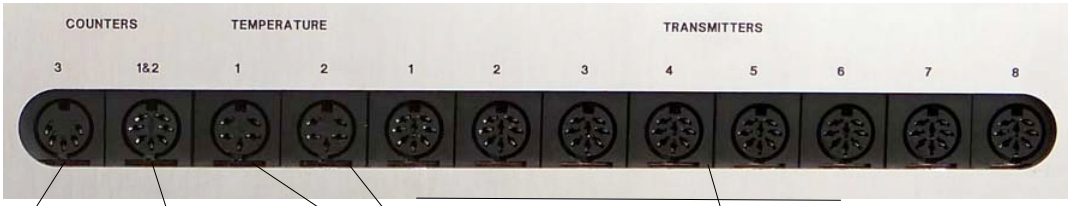
This is a circular 3 pin Bulgin socket which are connected to volt free contacts. The connections are L=normally closed, N=normally open, E=common

Digital Inputs

These accept a logic signal of 0 or 5v and can be used to attach switches or extra indicators. This needs to be programmed into the system at Scotia.

Prog

This allows access to the firmware in the unit. This is for Scotia use only.



Counters 3

5 pin 180° DIN socket

For connection to a high speed counter (eg inductive sensor type)

Counters 1&2

7 pin DIN socket

For connection to counters

This input allows either high speed counters (eg inductive sensor type) or slow speed counters (microswitch). The slow speed counter input is debounced to allow accurate counting.

Temperature

5 pin 240 degree DIN socket

For connection to RTDs (Pt100) to provide temperature measurement

4-20 mA Inputs

8 x 8 pin DIN sockets

The ports can take 4-20mA input from any source whether active or passive loop provided the connected plug is wired accordingly.

The plug which attaches to here can be fitted with a serial number chip which uniquely identifies it to the SDAS.

Data received here will be graphed by the SDAS and saved as a data packet to disk.

The SDAS will detect if chipped transmitters are plugged in to the sockets. Those with no chips will be set to off unless they are switched on at the start of data acquire. Transmitters not chipped must be selected before they can be used for acquiring.

SDAS3 Specification

Power supply		
Input voltage	90 to 264V 47-63 Hz	
Input current	2.1 A @ 110VAC, 1.1A @ 230 VAC	
Tx output voltage	24V DC fused at 125mA	
Inputs		
Counters	High speed counter pulse input Slow speed counter with debounced inputs using change over switch	
Temperature	Pt100 sensor – 4 wire configuration Accuracy = 0.2 degrees C	
4-20 mA inputs	Active or passive loop depending on plug configuration Identified by electronic serial number Loop resistor = 100 ohms Accuracy = 0.0001 mA	
Operating range	-10 to +40 degrees C	
Weight	8.7 kg	
Dimensions	Width	320 mm
	Height	180 mm
	Length	430 mm

All connections must be made prior to switch on. Connect keyboard mouse and monitor and the inputs from the sensors. The SDAS determines what is attached to it at start up and applies this to the data it collects.

If sensors are changed the system MUST be restarted. Hot swapping of inputs is not permitted and may cause internal damage.

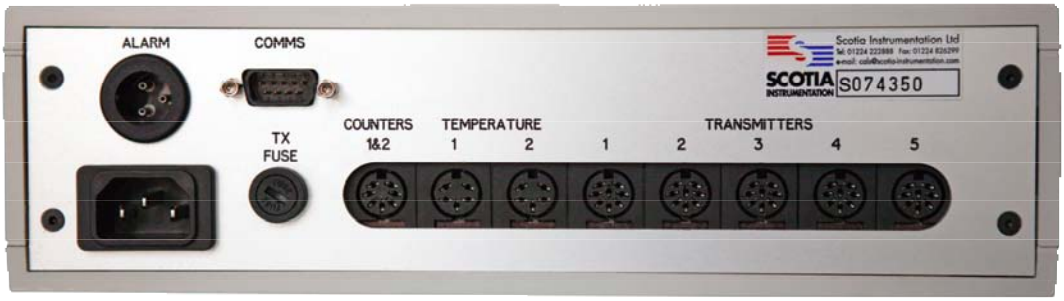
SDAS5 Specification

Power supply	
Input voltage	90 to 264V 47-63 Hz
Input current	2.1 A @ 110VAC, 1.1A @ 230 VAC
Tx output voltage	24V DC fused at 200mA
Inputs	
Counters	2 x High speed counter pulsed input Slow speed counter with debounced inputs using change over switch
Temperature	Pt100 sensor – 4 wire configuration Accuracy = 0.2 degrees C
4-20 mA inputs	Active or passive loop depending on plug configuration Identified by electronic serial number Loop resistor = 100 ohms Accuracy = 0.0001 mA
Digital	0v = Low 5v = High
Operating range	-10 to +40 °C
Weight	6.0 kg rack 11.2 kg case
Dimensions	Width 320 mm Height 180 mm Length 430 mm

All connections must be made prior to switch on. Connect keyboard mouse and monitor and the inputs from the sensors. The SDAS determines what is attached to it at start up and applies this to the data it collects.

If sensors are changed the system MUST be restarted. Hot swapping of inputs is not permitted and may cause internal damage.

Scotiadatabox Unit



The sockets and specification of the Scotiadatabox are the same as the SDAS except that the Comms port is used for connection to a PC computer. This PC must have an SDAS program installed and running either on from its hard drive or on a plugged in USB stick.

Spares and Accessories List

Stock No	Description	Addit Description
1018113	Transmitter <10000psi	4-20mA, DIN 43650 plug & socket c/w chip + cable
1021722	Transmitter >10000psi	4-20mA, DIN 43650 plug & socket, c/w chip + cable. F250C autoclave fitting,
1022874	Connector	Free socket connector for alarm option
1022870	Fuse	125mA , 20mm Anti-surge fuse
1020405	Leads	1m Extension Lead Pressure
1019859	Leads	10m Extension Lead Pressure
1018392	Leads	10m Extension Lead Temperature Probe
1018391	Leads	15m Extension Lead Temperature
1018390	Leads	15m Extension Lead Pressure
1020954	Leads	20m Extension Lead Pressure
1020955	Leads	20m Extension Lead Temperature
1022872	Leads	3m Network Lead
1022892	Leads	Stroke counter connection lead
1021633		Keyboard & Integral Keypad
1021634		Mains Lead 2 Way, 4m
1021637		USB Printer, Lead & PSU
1022858		17" TFT Monitor
1022877		Temperature probe c/w 1m cable
1022878		Temperature patch c/w 1m cable
1022894		USB stick
1017998	Case	Storage Case for SDAS
1018572	Case	Transit Case for ScotiaDatabox
1022884	Case	Transit Case for SDAS c/w wheels and handle

Appendix 1

Starting the SDAS unit

The SDAS unit is started by switching on the power button. The SDAS has a basic interface along the bottom is a task bar from which you can do various tasks. These include shutting down the SDAS safely, starting the main SDAS application, viewing the SDAS manual, file and printer operations, advanced configuration, noting the operating system version and registration status and setting the current time. The following screen appears when the system starts up.

Note that the button bar will disappear when the SDAS program is launched or you place the mouse close on it. Placing the mouse near the bottom of the screen will make it reappear.

Safely shutdown the SDAS

Launch the SDAS application

View the SDAS manual

Access File and Printing and configuration panels

Operating system version

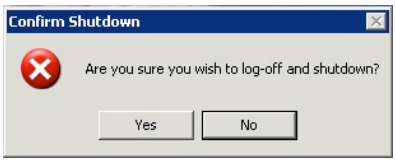
Registration status

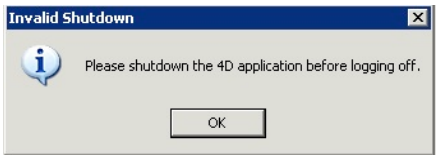
Current Time

Shutdown - Shutting down the SDAS unit

The shutdown button safely shuts down the SDAS unit. When pressed you will receive a confirmation dialog or if the SDAS application is still running you will be prompted to Shutdown the SDAS application. Once you have closed the SDAS application you will need to click the shutdown button again.

normal shutdown confirmation





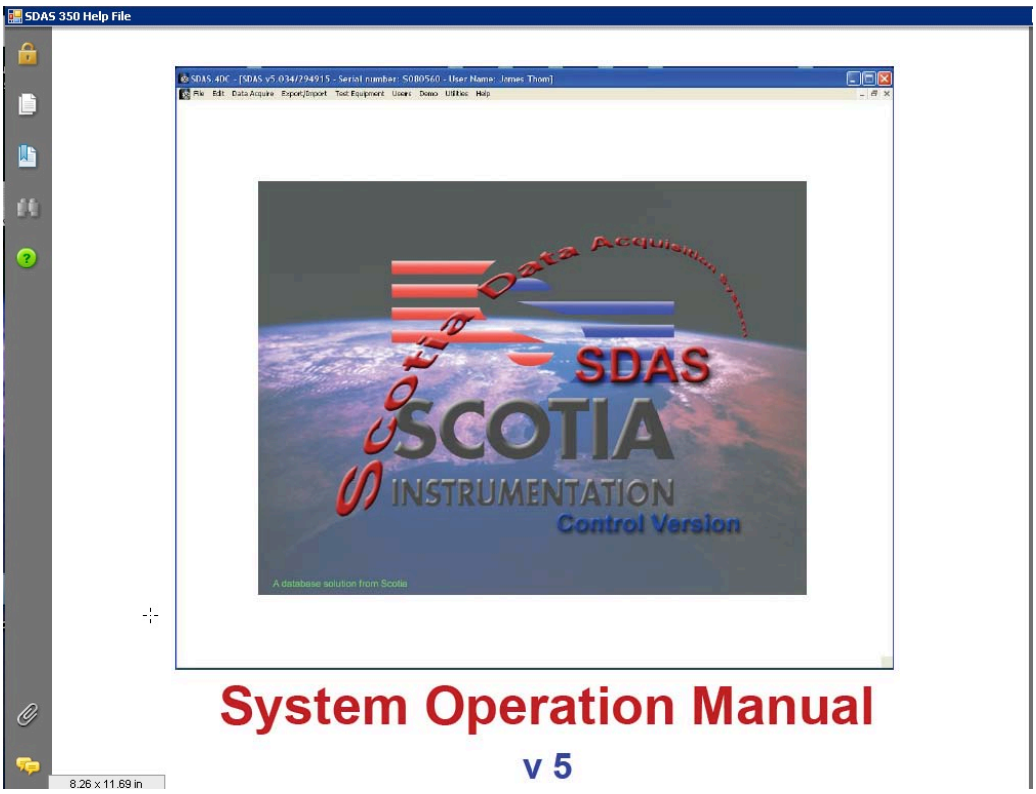
Incorrect shutdown close the SDAS application from the file menu.

SDAS - Launching the SDAS program

The SDAS button will launch the SDAS application. If the running SDAS application has been minimised for some reason then this button will restore the SDAS application to full size. The SDAS program should never be minimised while logging.

Help - Operation manual pdf

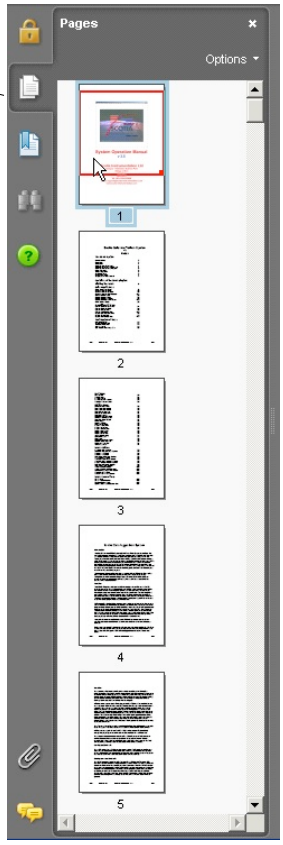
The Help button launches the SDAS manual in a new window as shown below.



Along the side of the window are some useful tools. Note that the lock, paperclip and speech bubble items currently offer no useable features.

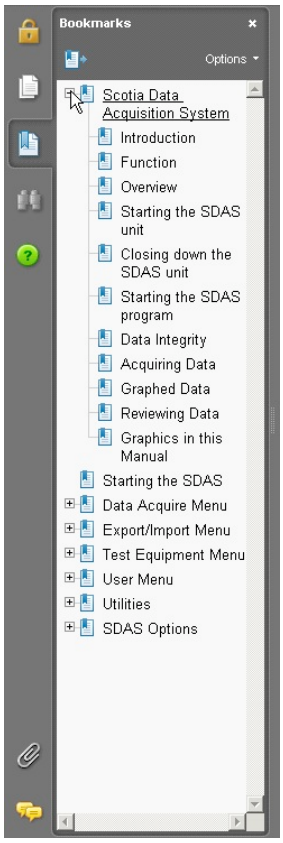
Pages

This displays thumbnails of each manual page in the bar to the left of the screen.



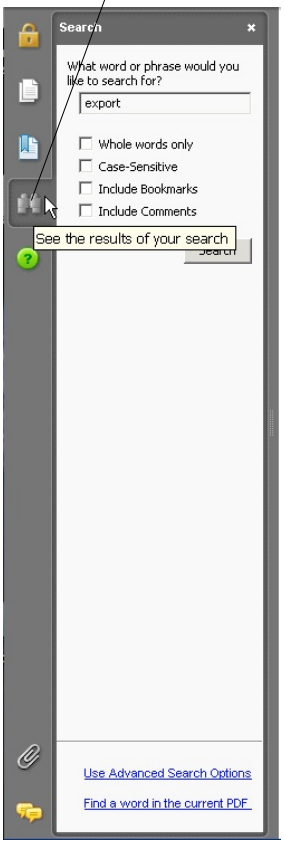
Bookmarks

This displays an expandable index by section.

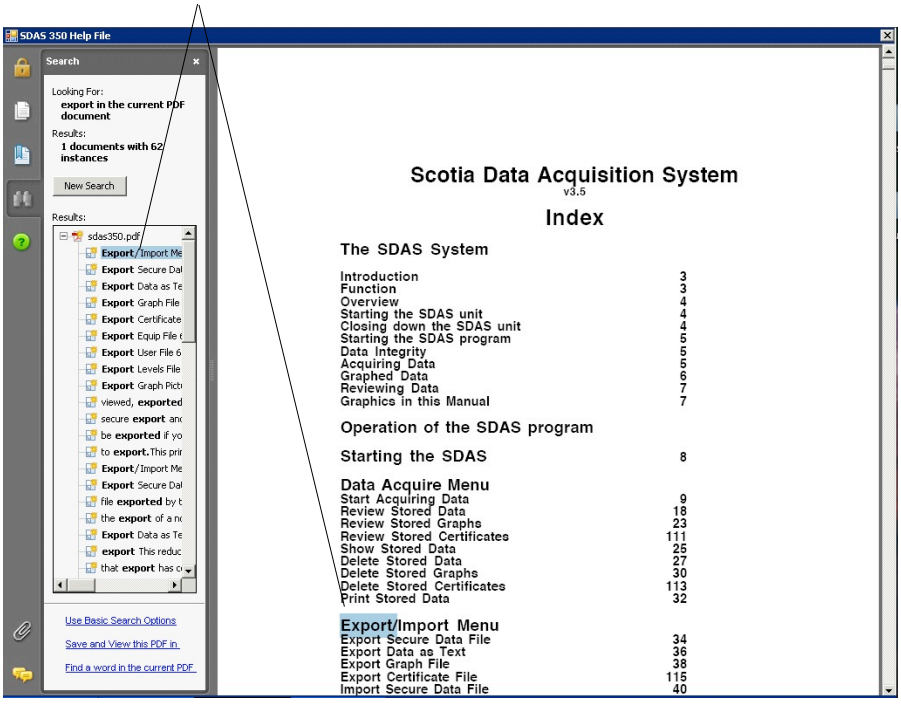


Search

This displays a search window which allows you to search through the manual by a variety of means including phrases and keywords.



Using search will display a list of results and highlight the items on the selected page view as shown below



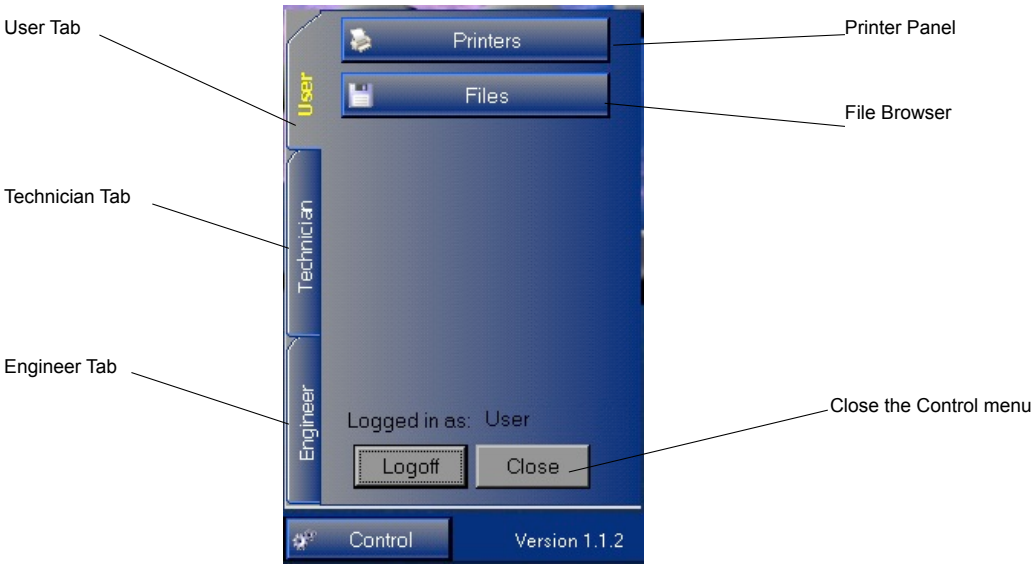
Control - Accessing the OS controls

The control button will open a menu with User, Technician and Engineer Tabs.

The default tab is the User which requires no password to use. The Technician and Engineer Tabs require passwords and the Engineer Tab is currently restricted to Scotia Personnel only.

The user tab has 2 main functions. The selection of a default printer and the File menu. The file menu lets you manually copy saved data files if you chose not to write them to the correct location or you wish to copy them elsewhere or simply wish to delete them.

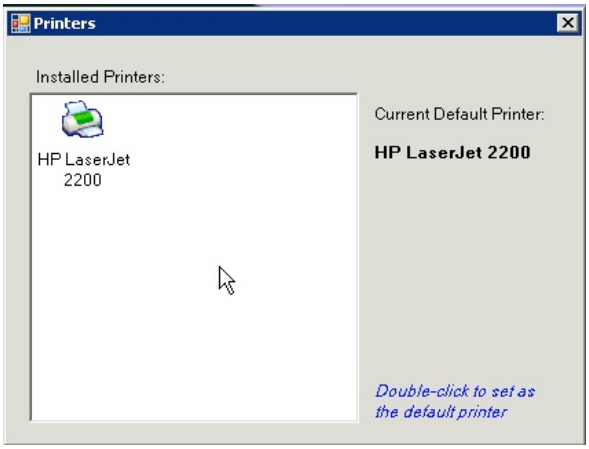
User tab



Printers - Selecting a printer

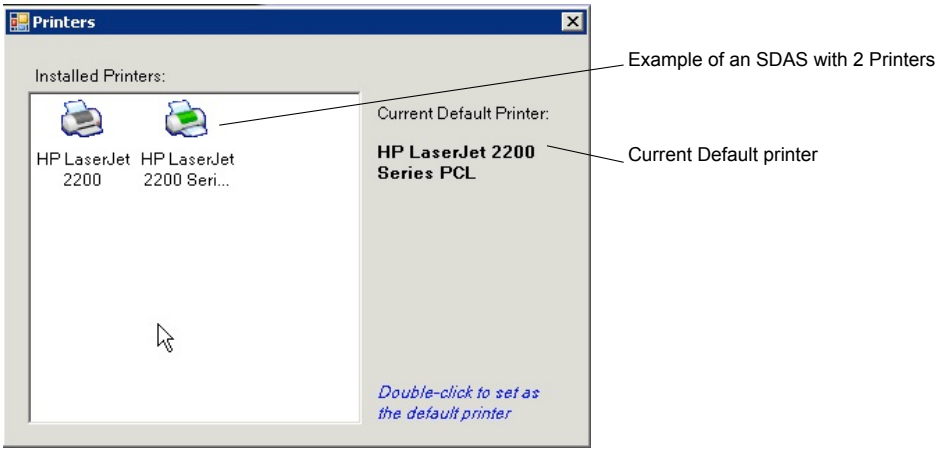
If you click the Printers button the printer panel will open in a separate window.

By default most SDAS units have only one printer. If you have more than one printer you can choose the default printer by double clicking the icon of the printer. It will turn green to signify it is the default printer and the text at the side will also indicate the current default printer.



Example of a normal single printer panel.

Note the printer name will be different depending on what printer or printers are installed on your SDAS.

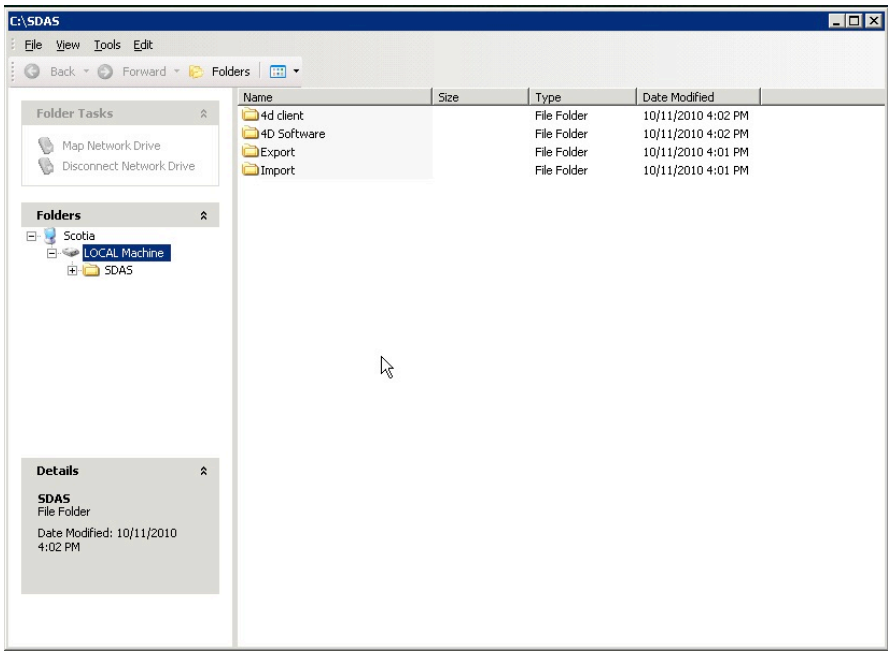


Files - Accessing files

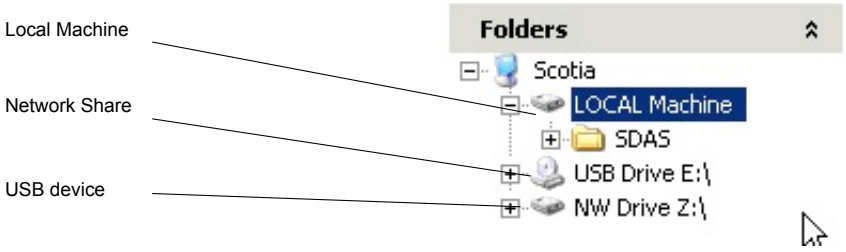
If you click the Files button the file browser will open in a separate window. The file browser is similar to the normal windows file browser with a few exceptions. The browser will only display folders, TXT and JPG files. Other files types will be hidden. For this reason please ensure you leave the .txt extensions on any files exported from the SDAS Application or will not be able to access them.

On the local machine only the SDAS folder can be written into. We recommend you use the created Export and Import folders for files you wish to store on your SDAS. Do not alter the 4D client or 4D software folder as this may stop the SDAS application operating.

All folders on a USB device or network share are accessible but the type of files displayed are restricted to folders TXT, and JPG files.



If you have a USB memory key or hard drive attached it will appear below the local machine. Similarly if you have a network share mapped it will appear below the local machine. The map network and disconnect network drive functions are disabled in user mode. They are active in technician mode.



Clicking the plus symbol will expand the folder tree. Right clicking or selecting a file then using the edit menu will allow you to copy, paste and delete files.

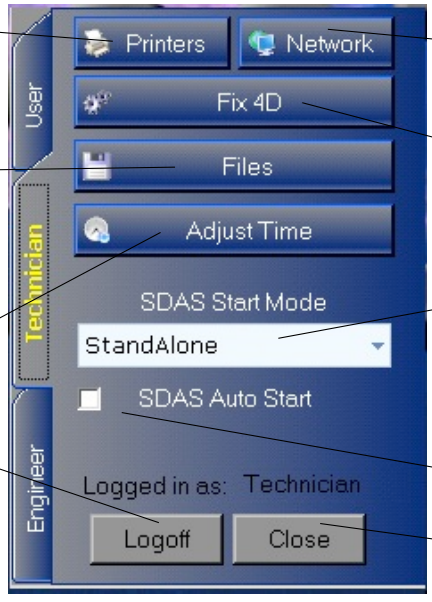
Technician tab

The Technician Tab offers a number of configuration options. This tab should only be accessed by approved staff as adjustments may cause undesirable operation.

When clicked you will be prompted for a Password in a login window. Please note once you have logged in you will not be logged off until you restart the SDAS or click the log off button. Please ensure you log off when you are finished or you may leave panels open for use by users not approved for this access.

Log in window

Log off button



Launch the printer installation wizard

Open the network panel to adjust the SDAS's TCP/IP connection.

Open file browser with Map and Disconnect network drive features enabled.

launch the Scotia Remote Support Application
(requires working network and internet access)

Adjust the time. This button deactivates 12 minutes after the SDAS is switched on.

Adjust the SDAS start up mode Standalone or Network.

Log off Technician and revert to User mode

Enable automatic launching of the SDAS application on login.

Close the Control menu

Printers - Installing a printer driver

Clicking the Printer button in technician brings up the Add Printer Wizard this functions the same as the Windows XP printer installation wizard and you can install USB or network printers to the SDAS unit.

Please note that installation of printers by non-Scotia staff is at your own risk as some third party drivers may result in an unstable or inoperable SDAS.

Although almost any printer will work with the SDAS unit some printers cannot be installed by this wizard and will require installation by Scotia technicians.

To be compatible with the SDAS the drivers need to conform to the following requirements.

Drivers must be Windows XP SP2 compatible.
Drivers must be INF file format.
Drivers must not install non standard application to work such as system tray based ink monitors or replacement printing systems, the operating system is XP embedded and these kind of applications may result in a non bootable system.

Most basic Hewlet Packard INF Driver only packages are suitable. The SDAS also has some printer drivers bundled with it.

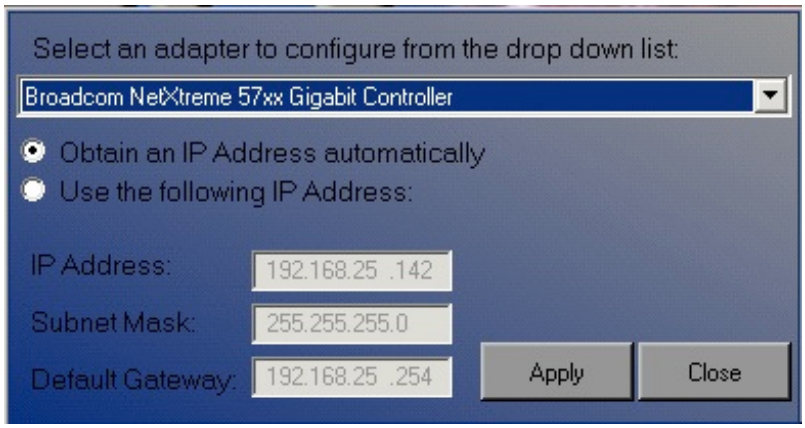
Note the following:

Generic printer drivers that require configuration after installation can be installed but there will be no way configure the driver after installation these include the HP universal network printer driver.
EXE Installers cannot be used unless installed by Scotia Technicians.

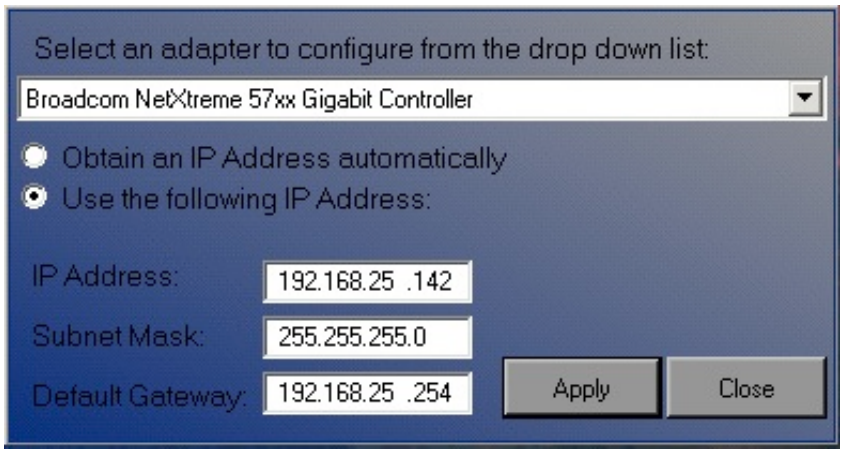
The wizard may prompt for files not present in the OS install and these will need to be extracted from a Windows XP SP2 CD or may be present in the C:\windows\system32\drvstore folder.

Network - Configuring access to a network

Clicking the Network button will open the TCP/IP configuration panel in a new window. By default SDAS units are set to use DHCP and if your network is configured to support DHCP you not need to do any further configuration.

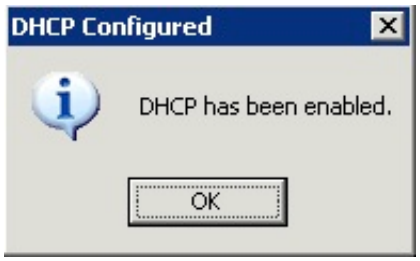


If you require you can set the SDAS unit to have a Static IP address. To do this simply check the “Use the following IP Address” radio button and enter the IP address, Subnet Mask and Default Gateway you wish to use then click apply.



You should then receive a prompt once the address has been set.

After the IP address has been set to a static address you can reset it to DHCP by simply checking the “Obtain an IP Address automatically” and the SDAS will obtain an IP address from your DHCP server. When an address has been obtained you will receive a prompt confirming DHCP has been enabled.



Fix 4D - using the remote support program

Clicking Fix 4D button launches the Scotia Remote Support application in a new window.

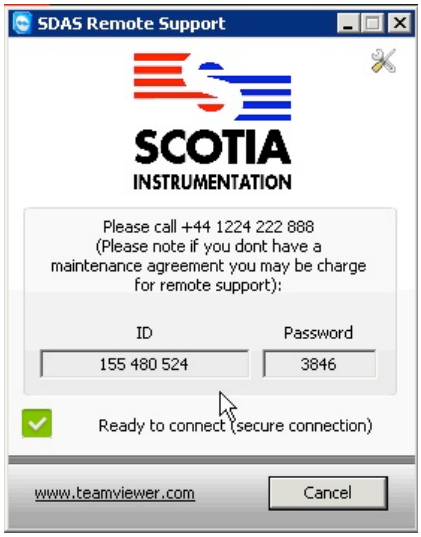
The Scotia Remote Support application allows a Scotia Technician to take control of your SDAS remotely over the internet in order to do repairs to data files or investigate reported problems.

The remote support application includes full encryption, based on RSA private-/public key exchange and AES (256 Bit) session encoding. This technology is based on the same standards as https/SSL and is considered completely safe by today's standards. The key exchange also guarantees a full client-to-client data protection.

In addition to the PartnerID the support application generates a session password that changes with every software start to provide additional security against unauthorized access to a remote system. Security relevant functions like file transfer require additional, manual confirmation from the remote partner. Also it is not possible to invisibly control the SDAS. For data protection reasons the person operating the SDAS has to be able to detect when someone is accessing the machine.

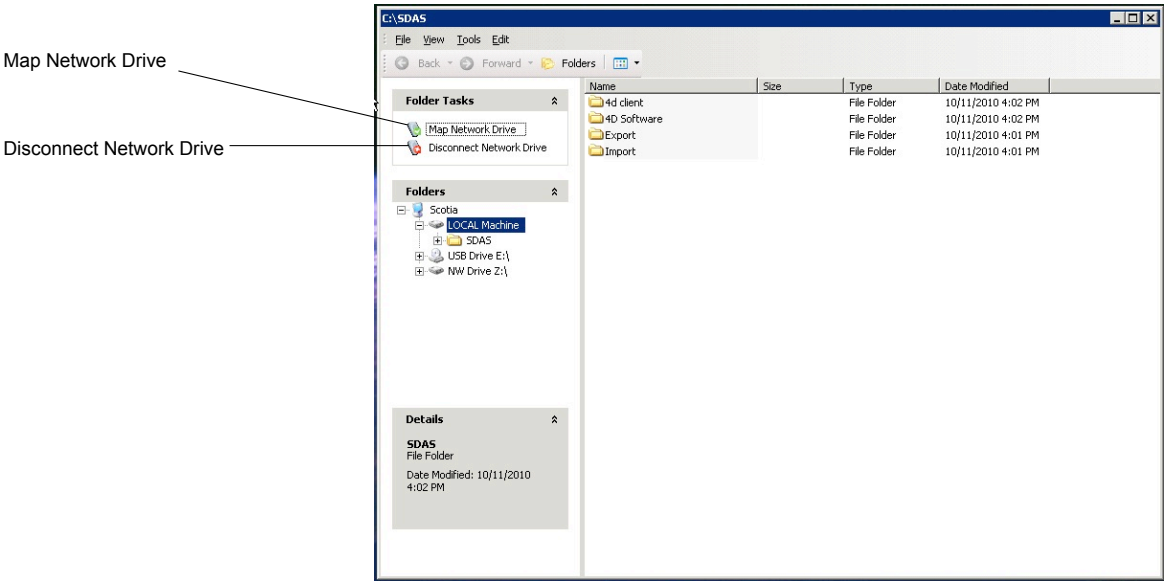
All support sessions have to be initiated from the SDAS. A fully working internet connection is required for the support application to work for this reason the SDAS must be set to use DHCP. The support application is able to traverse Firewalls and NAT without further configuration. Proxy server use may require additional configuration.

To initiate a Support session you will need to launch the Support application and provide the ID and Password to a scotia engineer, these are clearly displayed in the SDAS Remote Support window. Please note that if you do not have a maintenance agreement you may be charged for remote support but this will be fully explained along with charges at the time.



Files - Accessing files

Clicking the Files button will open the Files browser as in the User tab, however the Map Network Drive and Disconnect Network Drive functions will be enabled.



The Map Network Drive and Disconnect Network Drive functions can also be accessed from the Tools menu. This allows you to connect to SMB

Clicking Map Network Drive will open a Map Network Drive Wizard in a new window. Simply choose the drive letter you want to assign to the network share E: through to Z: a possible 22 connections.

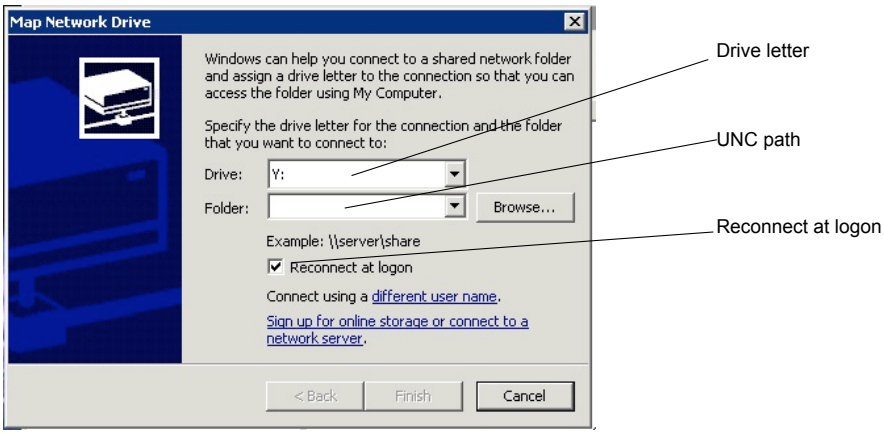
Although you can select D: as a 23rd connection it is recommended that you do not use this but leave it for use with USB devices.

After you have selected the drive letter you wish to use enter the UNC path of the folder you wish to connect to. For example \\server.scotia.local\sdas or \ \192.168.0.1\share.

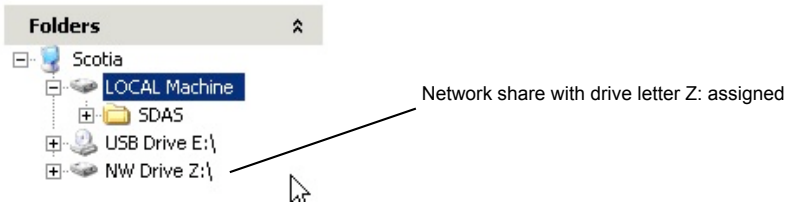
You can also use the “Browse...” button to find the SMB network share you wish to use but this may have difficulty finding your share depending on how your local network is setup and network security policies. Consult your IT department for UNC paths.

Check the Reconnect at logon if you wish the SDAS to remember the connection if you do not check this option the SDAS will forget the connection when it is restarted.

After choosing your Drive letter and entering the path and checking Reconnect at log on, if required, press the “Finish” button. You will then receive a prompt for the user name and password for the share you are trying to access. In some cases the user name will need a qualification to work for example “scotia.local\sdasuser” , “192.168.0.1\sdasuser” or “sdasuser@scotia.local”. Please consult your IT department for the correct username and password.

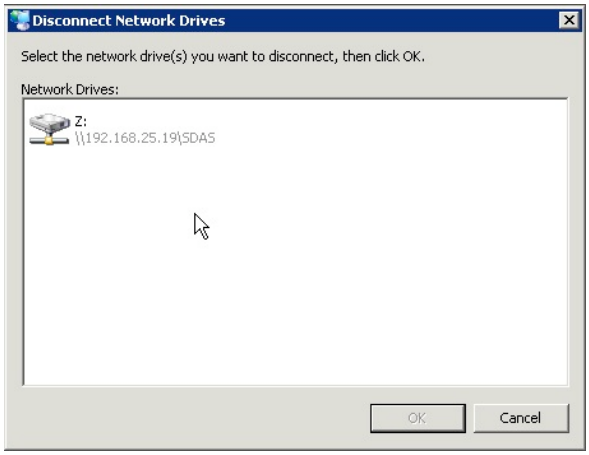


After mapping a drive you may need to close the File browser and reopen it for the share to appear. If your network share still does not appear please ensure you checked reconnect at logon then restart the SDAS. The network share will appear in the file browser as NW Drive and the letter you chose. Multiple network shares you have mapped will appear in alphabetical order.



Please note that currently SDAS units do not support SMB 2.0 or SSL signed SMB connections. Some server configurations require SMB 2.0 and the automatic switching between SMB 2.0 and SMB 1.0 can cause slow performance. Depending on your SMB shares setup in Windows 2003/2008 Server, Windows 7 and Windows Vista you may need to disable SMB 2.0. Please consult your IT department for advice.

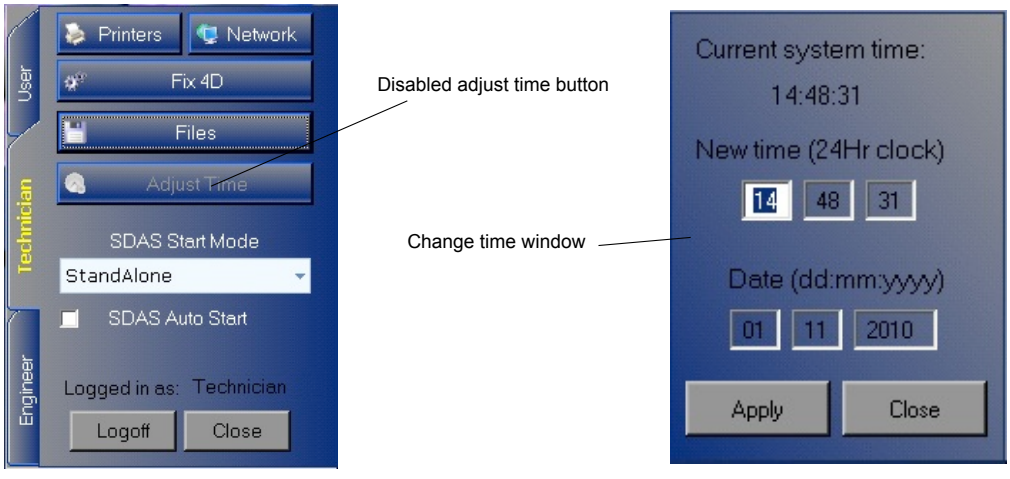
Clicking Disconnect Network Drive will open a prompt window asking you to select the drive you wish to disconnect. Simply select the drive you wish to remove then click ok. You may need to restart the file browser or SDAS for this to take effect.



Adjust Time - Setting the OS time

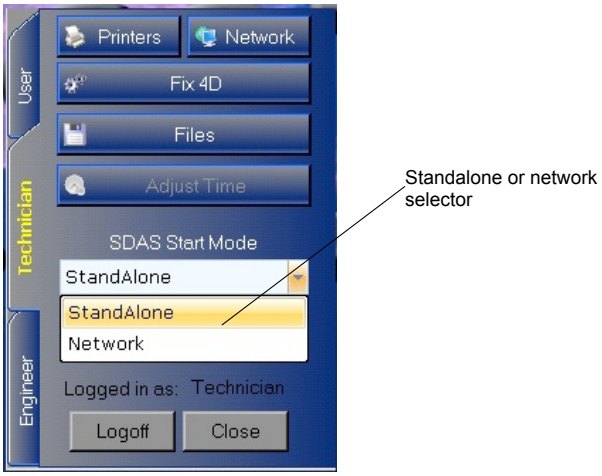
Clicking the Adjust Time button will bring up a panel allowing you to change the time and date on the SDAS. This button will only work for 12 minutes after the SDAS is turned on or until the SDAS program is launched. The button will disable and grey out as shown below after 12 minutes or the SDAS program launch. You will need to restart the SDAS unit to reactivate it. Note that if the SDAS Auto Start feature is enabled the adjust time button will be permanently disabled until the Auto Start is turned off as the SDAS starts in a mode that does not allow this function.

Clicking the button opens a window where you can change the time and date. Simply click in each box and make the changes you wish and click apply.



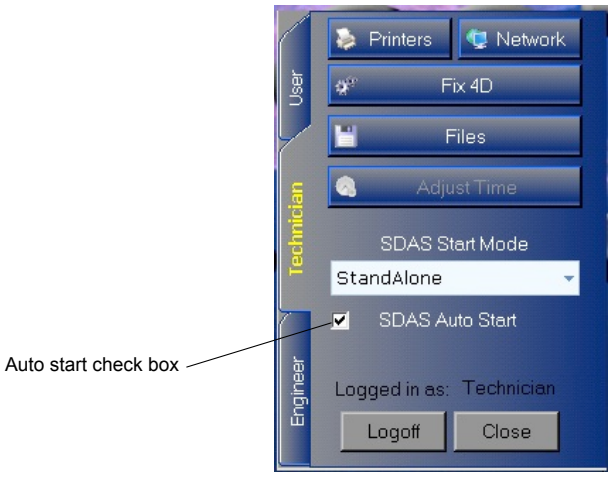
SDAS Start Mode - Local or Network

This allows a choice between the standalone and network modes of the SDAS. The network mode will require a network setup and a Server version of the SDAS program to be running on that network for this function to operate. The operating code and data are obtained and saved to that network Server.



SDAS Auto Start - SDAS with start up

This allows you to choose between the SDAS program launching when the unit is turned on or having to be manually started from the SDAS tab.



Appendix 2

4D Error messages

When the system hits a bug or develops an error of some kind then system error messages appear which look like the screen below. There are buttons on the screen which give options. If you choose to Continue then you should do so only to allow you to complete an immediate task.

YOU SHOULD NOT CONTINUE TO DO ANY IMPORTANT LOGGING WORK

These events are very unusual and often occur as a result of a combination of tasks which may not have been covered in testing. Please capture the error message. A good method of doing that is to simply use a camera or the camera on a phone. Do a close picture of the message and a longer shot of the whole screen. It would be very helpful if you could note what task you were doing and any unusual thing that happened.

Report the error to Scotia immediately either by phone or email. Do not continue to use the SDAS system until either the problem is fixed with an upgrade or you are advised by Scotia that you can continue.

The error showing below was as a result of a database index becoming corrupted somehow. If the user ignores this error and continues to do logging then the system appears to run normally but is unable to save any logging data to disk. This cannot happen from v506 onwards as the system now warns that this is happening at each save of data.