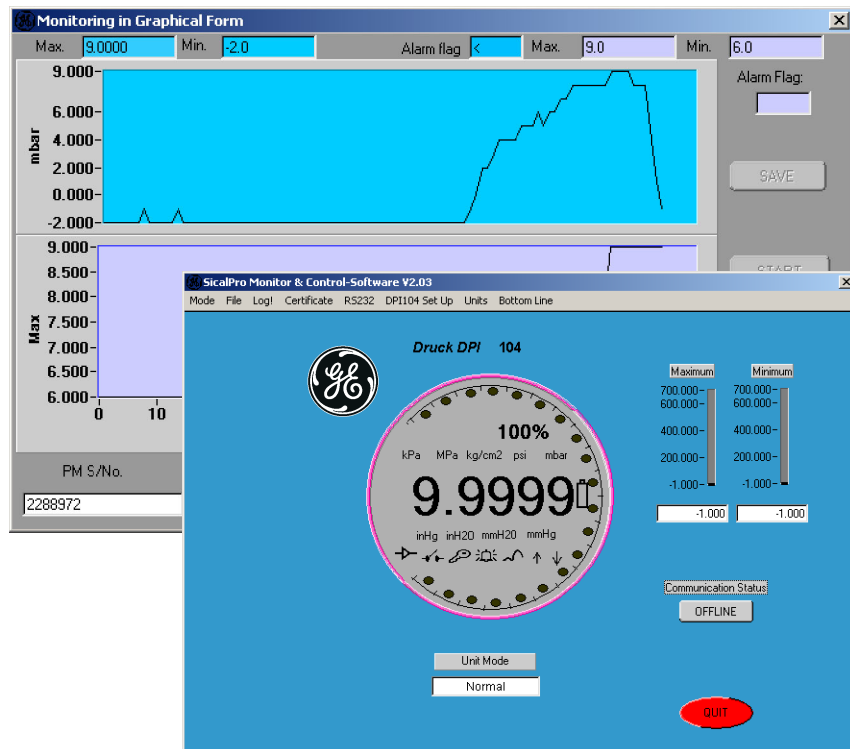GE
Sensing

SiCalPro

Monitor and control software

User manual - K0452

GE

Safety

Before you use the SiCalPro software program, make sure that you read and understand all the related data. This includes: the applicable local safety procedures, the instructions for the equipment you are using with the software, and this publication.

When you use equipment with this software, make sure that it is serviceable and that it is in its normal condition for safe operation.

Before you start an operation or procedure in this publication, make sure that you have the necessary skills (if necessary, with qualifications from an approved training establishment). Follow good engineering practice at all times.

Copyright

Trademarks

Software purpose

The SiCalPro software is a virtual instrument panel that lets you control and/or monitor a range of GE instruments from your computer. Modem and internet facilities are available. The software works with these instruments:

- PC6-IDOS/PC6-IS pressure calibrator: monitor output, control the instrument, change the configuration

- DPI 104/DPI 104-IS pressure indicator: monitor output, change the configuration, monitor a set of units (Safe area only: up to 99 in a "daisy chain")

- IDOS pressure module (IDOS module): monitor output, set tare, set the zero/span

- Digital pressure module (DPM): monitor output; set tare, set the zero/span

You can also use the software for these tasks:

- Save records of the instrument operation in log files. You can then see and/or print the results (as text or as a graph).

- Design, save and print a calibration certificate. This can use live data or data from saved log files.

- Convert data files to *.xls and *.doc format.

- PC6-IDOS/PC6-IS only: For applicable units under test (UUT), set up or change a calibration procedure. The UUT can then import the new procedure file.

Registration

The SiCalPro software is automatically registered when you purchase it. The copy of the software that you receive will work with all the instruments specified at the time of purchase.

Note: To use the software, it must have the serial number for each instrument you want to use it with. To add a new instrument, please contact us at www.gesensing.com.

Table of Contents

Chapter 1: Installation

Chapter 2: Getting started

Chapter 3: Instrument communications

Chapter 4: Instrument configuration

Chapter 5: Menu operations

Chapter 6: Calibration procedures (for PC 6 instruments)

Chapter 1: Installation

1.1 System specification

To use the SiCalPro software, this is the minimum specification for your computer:

- Operating system: Windows 95, Windows 98, Windows 2000, Windows NT 4.0 or Windows XP

- 66 MHz processor (Intel® Pentium® processors recommended)

- 128 MB of RAM (256 MB recommended)

- CD-ROM drive or DVD-ROM drive

1.2 Install SiCalPro software

Before you install the software, close all other Windows applications.

1. Insert the CD into the CD-ROM drive

   Note: If your computer is not set up to open a CD automatically, you must open the file from the CD yourself. Double-click the file setup.exe

2. When the InstallShield® Wizard opens on your computer, follow the on-screen instructions.

   To prevent error messages, we recommend that you do not change the default directories:

- C:\sicalpro

- C:\WINNT\sytem32\CVIRTE

- C:\Program Files\National Instruments

3. To install the National Instruments™ LabWindows™/CVI™ Run-Time Engine, the installation can include these steps:

- *Insert Source*: Click on *Cancel*. To use the SiCalPro software, the Device Drivers CD is not necessary.

- *Installation Complete*: Click on *Finish*. To use the SiCalPro software, there is no additional activation.

1.3 After installation

When the installation is complete, you can do the following:

- Chapter 2: Start the SiCalPro software. You can run more than one copy of the software at the same time; one for each instrument connected to the computer.

- Chapter 3: Connect the applicable instrument or instruments to your computer.

> *Caution! To prevent electrical damage when you connect or disconnect the RS232 connection on your computer, make sure the instrument power is set to off.*

- Chapter 4: Set up and use the software with the applicable instruments.

1.4 Remove the SiCalPro software

If it is necessary to remove the software from a computer, there are two programs to remove: SiCalPro and the related *Real Time Engine*. Use these steps to remove each program from your computer:

1. On the Windows taskbar, click on the *Start* button and select *Settings > Control Panel > Add/Remove Programs*.

2. Select the software program (SiCalPro or *National Instruments Software)* and select the "Remove" option.

3. Follow the on-screen instructions.

Chapter 2: Getting started

2.1 Introduction

This chapter gives a description of these items:

- the procedure to start the SiCalPro software

- the start up displays

- the procedure to set a different language

- the menu structure and options

2.2 Start the software

You can run more than one copy of the software at the same time; one for each instrument connected to the computer.

2.2.1 General start up procedure

1. On the Windows task bar, click on the *Start* button and select *Programs* > SiCalPro > SiCalPro*.*

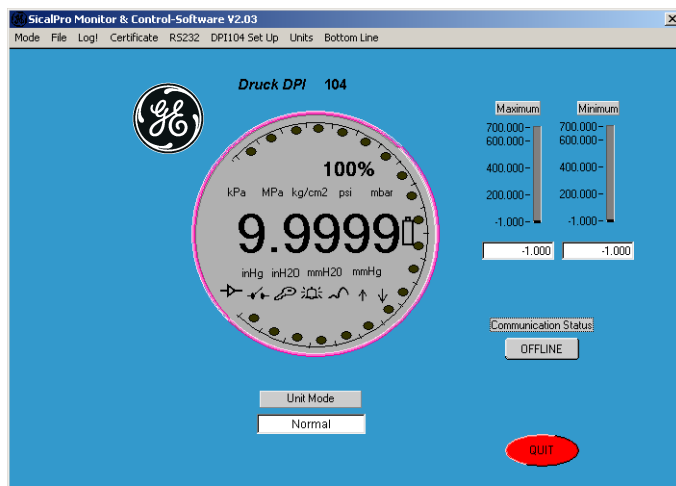***Figure 2-1:*** *Example display - OFFLINE*

2. Connect the instrument to a RS232 communications port on your computer. Refer to Chapter 3.

Caution! To prevent electrical damage when you connect or disconnect the RS232 connection on your computer, make sure the instrument power is set to off.

---

3. To start communication between the SiCalPro software and the instrument, click on *OFFLINE.*

2.2.2 Start up - Program group

Figure 2-2 shows the program group (*Start > Programs > SiCalPro*):

NILWCVIRTE***: This re-installs the Run Time Engine.

SiCalPro: This starts the SiCalPro software. If you right-click on this option, you can make a shortcut to put on your desktop.

vbdde: This starts a server connection to use the software over a computer network.
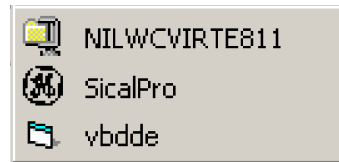
Figure 2-2: *SiCalPro program group*

2.2.3 Start up - Displays

When you start the software, Figure 2-3 gives an example of the *OFFLINE* window that opens for each type of instrument.

Table 2-1: *Key to Figure 2-3*

Item	Description
(1)	Menu bar (All instruments): To select a task from a menu list. There is a standard set of menu options plus special options for the different instruments. Refer to Section 2.3.
(2)	Analogue pressure gauge (PC6, IDOS module/DPM instruments only): To show the pressure values measured by the instrument.
(3)	Simulation display and keypad (PC6 instruments only). To simulate the display and control functions on the instrument. The keypad is not available (greyed out) in *MONITOR* mode.
(4)	Maximum and Minimum (All): To show the maximum and minimum pressures measured by the instrument.
(5)	Unit mode (PC6, DPI 104 instruments only): The mode gives an indication of the operations available. • PC6 instruments: *CONTROL* (the PC6 simulation keypad is available) or *MONITOR* (the monitor and log operations are available). This is set by menu *Mode*. • DPI 104 instruments: *NORMAL* (the monitor and log operations are available) or *Daisy Chain* (the daisy chain functions are available).
(6)	Communications status (All): The *ONLINE/OFFLINE* button starts or stops the SiCalPro communications with the instrument. If the instrument power is off and it has an internal power on function, *ONLINE* sets the power on.
(7)	*QUIT* button (All): To close the SiCalPro software.

Table 2-1: *Key to Figure 2-3 (Continued)*

Item	Description
(8)	Simulation display (DPI 104 instruments only): To simulate the display functions on the instrument.
(9)	Output panel (IDOS module/DPM instruments only): To show the output from the instrument.
(10)	Tare button (IDOS module/DPM instruments only): To make an adjustment for atmospheric pressure and set the pressure value to zero. The tare value is reset each time the instrument goes *ONLINE.*
(11)	Reset Max/Min button (IDOS module/DPM instruments only): To reset the maximum and minimum pressure values to zero.
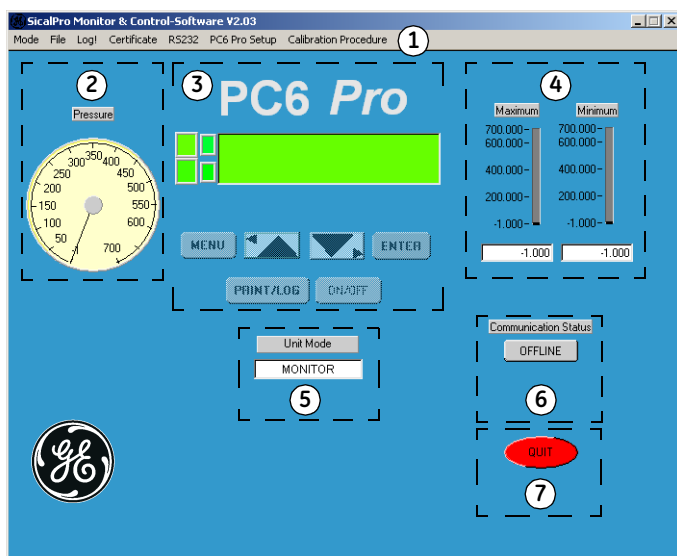
(a) PC6-IDOS/PC6-IS:
Special and common SiCalPro functions
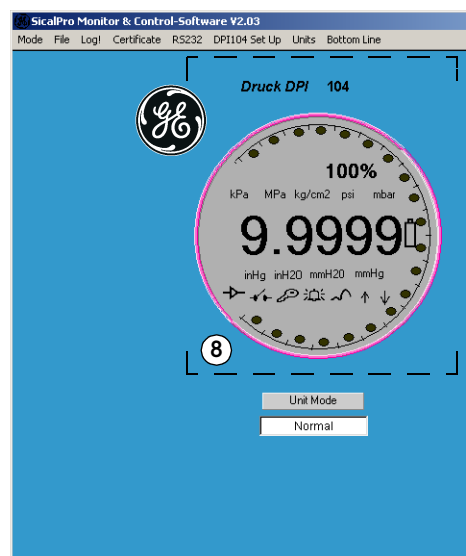
(b) DPI 104/DPI 104-IS (Part only):
Special SiCalPro functions

** **Note:** The DPM has almost the same display as the IDOS module*
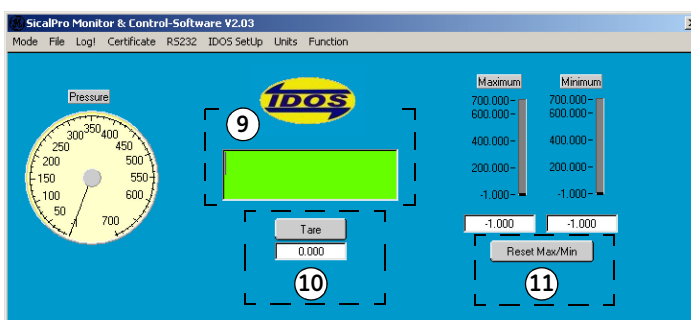
(c) IDOS module (Part only)*:
Special SiCalPro functions

Figure 2-3: *Example start up displays - Main functions*

2.2.4 Start up - Language

The software can operate in these languages: English, German, French, Spanish, Italian.

To change the language, use the menu bar:

> Select *** *Setup > Language* and set the applicable option. (Where *** = PC6 Pro; DPI 104, IDOS, DPM)

Note: For correct operation, make sure you are using the same language on the instrument.

2.3 The menu options

Table 2-2 gives a description of the menu options available with all the instrument types.

Note: Some of the fields that you are permitted to change contain hidden characters. If you want to change these fields (text or numeric values), highlight all the applicable characters and overwrite them.

Table 2-2: *Menu Bar Functions*

Menu Heading/ Options	Description
Mode: Sets the operations available with the instrument. The default mode of operation is *Monitor* (*Text*) mode. To use this menu, the instrument must be *ONLINE*.	
Control	(PC6 instruments only) In this mode, you can use the *MENU*, *UP*, *DOWN*, *ENTER*, *PRINT/LOG*, and *ON/OFF* buttons to simulate operations on the instrument keypad. Refer to the instrument user manual.
	*Note: The **Log!** menu is not available in **Control** mode. If necessary, store the data on the PC6 instrument and export it to the SiCalPro software later.*

Table 2-2: Menu Bar Functions (Continued)

Menu Heading/ Options	Description
Monitor ▶	Two options: *Graphical* or *Text*.
	Graphical: To monitor the instrument output in a two-graph window format. Top graph: pressure values; bottom graph: an additional value applicable to the instrument.
	• PC6 instruments: Use *Control* mode to set the bottom graph value (volts, mV, mA, °C, maximum, minimum, % and tare). Other PC6 values are not available.
	• DPI 104 instruments: Use the *Bottom Line* menu to set the bottom graph value (maximum, minimum, %, switch).
	• IDOS module/DPM instruments: Use the *Function* menu to set the bottom graph value (maximum, minimum, tare, %, °C).
	Buttons: *EXIT* (To go back to the normal display), *STOP* (stop a graph record), *START* (start a new graph record), *SAVE* (save a graph record to a *.mon file).
	Text (Default): To monitor the instrument output on a normal SiCalPro display (Figure 2-3). The PC6 keypad is not available in *Monitor* mode. Refer to Section 5.2.
File: To work with the data files saved for an instrument (*.imp, *.mon, *.log files only). The *.imp files from a PC6 instrument contain data from a completed calibration procedure or normal log data.	
View ▶	Two options: *Graphical* or *Text*.
	Graphical: To show a graph and related data for all the records saved in a file. You can go through the records (▲ ▼), *Print* and *Cancel*.
	Text: To show the data for each record saved in a file. You can go through the records (*Prev.*, *Next*) and *Close*.
Delete	To delete a file (with a two-step approval)
Import	(PC6 instruments only) To import a log file (*.imp) from a connected PC6 instrument. To prevent errors, make sure you use the file export procedure for the PC6 instrument. Refer to the instrument user manual.
Print	To print a file to the default printer for your computer. The file prints as unformatted text. If the output is incorrect, adjust the printer settings or use the option *File > View > Graphical > Print*.

Table 2-2: Menu Bar Functions (Continued)

Menu Heading/ Options	Description
Convert	To convert a file (*.imp, *.mon, *.log) to Microsoft® Excel® or Microsoft® Word format (Default file location: c:\sicalpro\data). The file paths for these programs are set in: *** *Setup > File Convert Path*.
	Convert File Type (Excel): Starts the Microsoft Excel program and puts the data into the default file: SICALPRO.XLS (new data replaces old data). To keep the data, save the file with a different filename and/or save it to another directory.
	Note: SICALPRO.XLS must stay in the default file location.
	Convert File Type (Word): Starts the Microsoft Word program and saves the data in the file: *.doc (* is your original filename). If necessary, you can change the filename and move it to another file location.
Log! To make a permanent record of the instrument operation (normal *Log* or *Leak Test*). To use this menu, the instrument must be *ONLINE*. The data is collected in *a Text* or *Graphic* window format. The *Log Type* (*Timed* or *Keyed*) does not affect *Leak Test* operations.	
	Log! opens the *Logging Set up* window. Refer to Section 5.4.
	PC6 instruments: *Timed* or *Keyed*; *Timed - Logging Interval* and *Leak Duration* are all set with the instrument *Menu* button. Refer to the instrument user manual.
	To do a *Leak Test,* set the instrument to show *Leak: Start Set-Time Exit*
	DPI 104, IDOS module/DPM instruments: *Timed* or *Keyed*; *Timed - Logging Interval* and *Leak Duration* are all set in menu:
	*** *Setup > *** Setup > *** Configuration* (Refer to Chapter 4)
Certificate: To set up and control the calibration certificates for an instrument. In menu *** *Setup*, you can set up a password for this function. You can also set standard header/footer text; set a standard adjustment to the printed layout; set a standard user name for *Calibrated by: ...* .	
New	Two certificate options: *Normal* or *Leak*
	Type in the *Test* and *Standard* instrument data; add certificate headers/footers and a user name; use *Stored* data (*.log or *.imp files) or *Live* data from an *ONLINE* instrument.
	You can *View*, *Print* or *Save* the certificate. The *Save* function makes two files: *.cer and *.txt. Refer to Section 5.5.
Edit	To change a certificate.
	Note: It is not possible to change these items: Test Instrument Details (Range); Standard Instrument Details (Serial No, Accuracy); Results (Stored Data).

Table 2-2: Menu Bar Functions (Continued)

Menu Heading/Options	Description
Print	To print a certificate to the default printer for your computer. Refer to Section 5.5
Delete	To delete a certificate. This deletes the *.cer and the related *.txt file (with a two-step approval).
RS232: To set up the RS232 communications and do tests for correct operation, or to set up communications for a modem. The modem facility lets you communicate with an instrument through the telephone system.	
Config	To set up the communications between the SiCalPro software and the RS232 port used by the instrument (for example: COM1). The settings must be correct for the instrument. Refer to Chapter 3.
Test	To do a test for RS232 communications between the computer and the instrument: *OK* - Port settings correct; instrument *ONLINE* *No communication* - Instrument *OFFLINE* *Failed* - Port settings, power supply or connections are not correct
Modem Settings	To use this menu, the communications must be *OFFLINE*. Set the applicable values for *COMS port*, *Telephone Number* (with area codes but no space characters), *Modem Usage*, *Dialling Mode*, *Result Code Format*. Refer to Chapter 3.
*** ***Setup:*** There is a standard set of options plus special options for the different instruments.	
Change Password	To set, change or remove the password for menu *Certificate*. Passwords are case sensitive. Default: no password. You must confirm a *New Password*. Use the tab key or click on an available option (*Enter New Password*, *Re-enter New Password*; *Remove Password* ... *No* ▼). If you lose your password, contact us at www.gesensing.com.

Table 2-2: Menu Bar Functions (Continued)

Menu Heading/ Options	Description
*** Setup ▶	To set and/or see configuration options for the connected instrument; set an instrument certificate number (for example: the last calibration certificate); set applicable special instrument options:
	DPI 104: *Daisy Chain*. If you have more than one DPI 104 instrument in a network, these options are available: *Abort Daisy Chain* (to stop daisy chain communications); *Set Auto Address* (to set addresses 00 to 99); *Select DPI* ... (to select the instrument you want to work with).
	IDOS module/DPM instruments: *Zero/Span* (to do a zero and span calibration); *Abort Zero/Span* (to stop the calibration); *History* (to show the last calibration date, span date and the overload history)
	Refer to Chapter 4.
Software Setup	This gives data about the SiCalPro software version and the instrument it communicates with:
	Software Serial No (the serial number of the instrument);
	Issue date (the software version date);
	Language (the software language specified in *** *Setup > Language*);
	Type (the instrument type).
	Edition (*Full* or *Demo*). You can use a *Demo* version 30 times.
	Internet Copy (*Yes* or *No*). An internet copy can send data to an internet server. Refer to Chapter 3
Certificate Layout	To set the *Header offset* (1 to 10) for your certificates. If you use preprinted paper, set a value that stops the first line of the certificate overwriting standard text and logos.
	1 = Certificate starts on line 1.
Certificate Header/Footer	To set up standard header and footer text for *New* certificates. Header text goes above the *Results* section; footer text goes below the *Results* section. Set the applicable text *On* or *Off* and click on *Update*.
User Names	To set up user names (1 to 10) for the *Certificate* function.
	To change a name, highlight the text and overwrite it. To set a default name for *New* certificates, use the *Active User* buttons (▲ ▼).
File Convert Path	To set up the file paths for the Microsoft Excel and Microsoft Word programs. If you use menu *File > Convert*, the SiCalPro software uses the specified locations to find these programs.
Language ▶	To change the default language for the software.
	Note: *For correct operation, make sure you are using the same language on the instrument.*

Table 2-2: Menu Bar Functions (Continued)

Menu Heading/ Options	Description
Units	(IDOS module/DPM instruments only) To set up two more pressure units: **User defined unit 1 (or unit 2) text:** Up to 6 characters. **User defined unit 1 (or unit 2) conversion factor:** An applicable value that changes the pressure (in bar) to another pressure unit. To update the standard *Units* list (on the menu bar), *Save* the new units. If a name is already used by a standard unit, the new unit is ignored. ***Note:*** *These units are only available in the SiCalPro software. They are not saved in the instrument. If you use the software on more than one computer, set up the new units in each copy.*
Internet	(Optional software for a Windows NT network that supports Active Server Pages - contact us at www.gesensing.com) This option lets you send instrument display data to an internet server. Another user can then use the internet to log in and monitor the data. You must set applicable values for *Web address*, *Password*, *File Update rate*, *Screen Refresh rate*, *Maximum no. of records*. Refer to Chapter 3.
Units (DPI 104 and IDOS module/DPM instruments only): To change the instrument's pressure units to another unit on the list (mbar, psi, MPa ...). To use this menu, the instrument must be *ONLINE*.	
UNIT 1 UNIT 2	(IDOS module/DPM instruments only). Two pressure units specified in menu *** *Setup > Units.*
Bottom Line (DPI 104 instruments) OR **Function (IDOS module/DPM instruments):** To set the value for the bottom graph that you see in menu *Mode > Monitor > Graphical.* The pressure units are the same as in menu *Units*.	
Maximum	Maximum pressure
Minimum	Minimum pressure
Percentage	Pressure as a percentage of the full scale output
Switch	(DPI 104 instruments only) Pressure values to open/close a switch
Tare	(IDOS module/DPM instruments only) Tare pressure
Temperature	(IDOS module/DPM instruments only) °C values from the instrument sensor

Table 2-2: Menu Bar Functions (Continued)

Menu Heading/ Options	Description
Calibration procedure (PC6 instruments only): To set up and control the calibration procedures for an instrument.	
New	To set up a new calibration procedure. This includes *File Name*; *Test Instrument Details*; *Calibration Point Details* and related text (to give procedure instructions).
	When the procedure is complete, click on the applicable button: *Print*, *Export*, *Save*, *Exit*. See below.
	Print: To print the procedure.
	Export: To export a calibration procedure to a PC6 instrument. The instrument must be *ONLINE* and it must be in the correct menu to import a file. Refer to the instrument user manual.
	Save: To save the procedure to a *.cal file.
	Exit: To go back to the normal display.
	Refer to Chapter 6.
Edit	To change a calibration procedure file (*.cal). When the changes are complete, click on the applicable button: *Print*, *Export*, *Save*, *Exit*

Chapter 3: Instrument communications

3.1 Introduction

This chapter gives a description of these items:

- how to make the RS232 connections to an instrument

- how to set up the RS232 communications and use the test function

- how to set up modem communications with an instrument

- (internet option) how you can send instrument data to an internet server

3.2 Connections to the instrument

Caution! To prevent electrical damage when you connect or disconnect the RS232 connection on your computer, make sure the instrument power is set to off.

Each instrument has an 8-way circular miniature connector. To connect an instrument to the 9-way D type RS232 communication port on your computer, use an applicable cable (Figure 3-1).
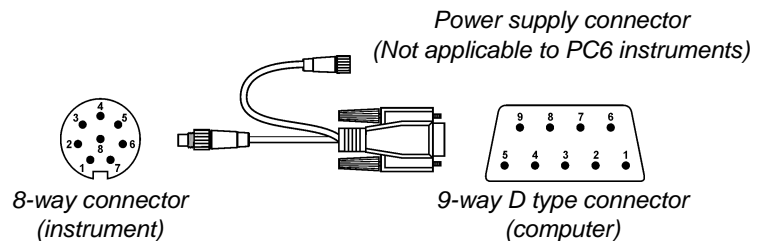
Figure 3-1: Example RS232 connection
(instrument to computer)

For the applicable connection instructions, refer to the user manuals for the instrument and the computer.

3.3 Set up the RS232 communications

To use this software with an attached instrument, you must set up the necessary data for the *PC Port Configuration* (Figure 3-2). To make sure it is working correctly, use the test function.

3.3.1 RS232 configuration procedure

1. On the menu bar, click on *RS232 > Config.* Figure 3-2 shows the window that opens.
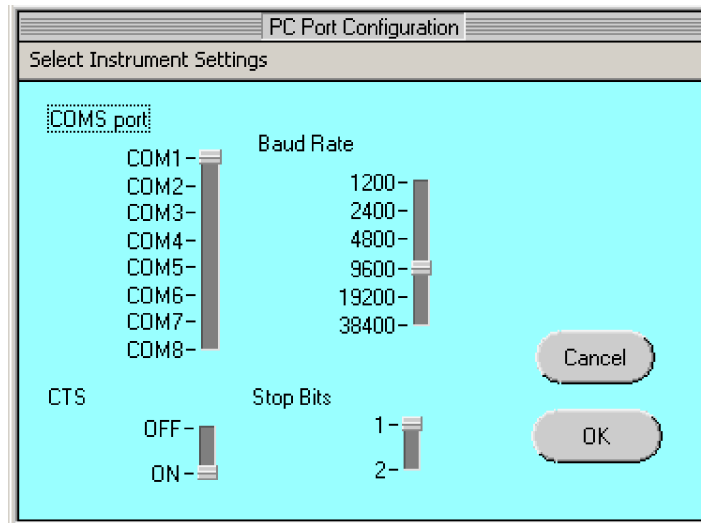
Figure 3-2: *Example display - PC port configuration*

2. Set the applicable values:

COMS port: The RS232 communications port that the instrument is using. Usually this is COM1. To use a computer to monitor more than one instrument at a time, you must have more than one RS232 communications port.

Baud Rate: The data transmission rate for the instrument (in bits per second). Usually this is 9600.

Note: *For the IDOS module, the baud rate is 19200; for PC6 and DPM instruments, it is possible to set different rates (refer to the instrument settings).*

Stop Bits: To indicate the end of a data word. Usually this is set to 1. For PC6 and DPM instruments, it is possible to have 2 stop bits (refer to the instrument settings).

CTS: (Clear to Send). A signal to indicate that the computer is ready to receive data. Usually this is set to ON.

3. To accept the settings, click on *OK* and wait for the software to make the changes.

4. If you get a *Failed* message, make sure the Windows system has the same settings for the specified COM port:

Baud Rate = instrument value;
Stop Bits = instrument value;
Data bits = 8; Parity = None; Flow control = None

Note: To change the COM port settings in your Windows system, refer to your computer instructions or contact your system administrator.

3.3.2 *Test for RS232 communications*

To do a test on the RS232 communications:

1. On the menu bar, click on *RS232 > Test.*

One of these results will appear:

OK - Port settings correct; instrument *ONLINE*
No communication - Instrument *OFFLINE*
Failed - Port settings, power supply or connections are not correct

2. If necessary, make changes to your settings or connections.

3.4 Set up modem communications

This facility makes it possible to communicate with an instrument through the telephone system. You must have two modems:

- a local modem connected to your computer (the computer with the SiCalPro software)

- a modem connected to the instrument - refer to your modem instructions

3.4.1 *Set up the local modem*

1. Set up or select the modem for your computer (for example: *Start > Settings > Control Panel > [... Modem ...]*). Refer to your computer instructions or contact your system administrator.

Note: To use the modem function with an IDOS module, the baud rate must be 19200. To use the modem function with the other instruments, the baud rate must be 9600.

2. Keep a record of the specified COM port (if applicable, click on the specified modem and click on *Properties*).

3.4.2 *Software settings for the Modem*

To use this software with the attached modem, you must set up the necessary data for the *Modem Settings* (Figure 3-3).

1. Make sure the software is *OFFLINE*. It is not possible to open the menu option *ONLINE*. This prevents corruption of your software settings.

2. On the menu bar, click on *RS232 > Modem Settings*. Figure 3-3 shows an example of the display that opens.
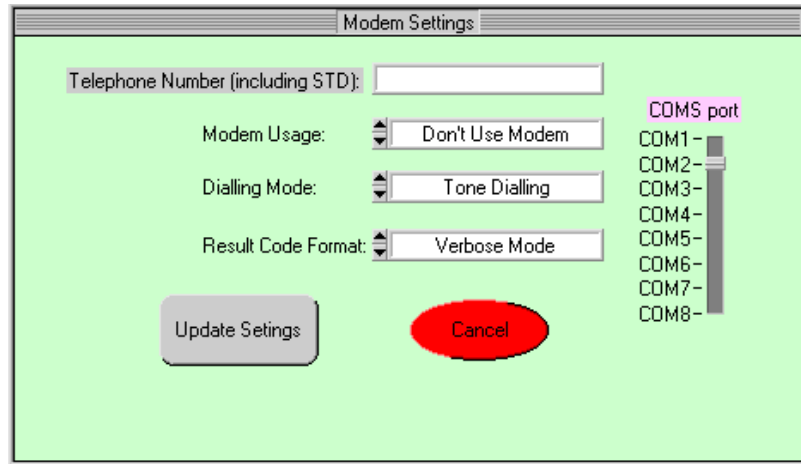
Figure 3-3: Example display - Modem Settings

3. Set the applicable values:

COMS port: The RS232 communications port that the modem is using.

Telephone Number (...): The number for the telephone connected to the instrument. Include all area codes but no space characters.

Modem Usage: Set this to *Use Modem*.

Dialling Mode: Default: *Tone Dialling*. Modern telephone exchanges use tone dialling (a tone for each number). If the exchange uses pulse dialling (a series of 'clicks'), set this to *Pulse Dialling*.

Result Code Format: Default: *Verbose Mode*. If you have communication problems with the modem, try the alternative *Terse Mode*.

4. To accept the settings, click on *Update Settings* and wait for the software to make the changes.

5. To start using the modem, click on *OFFLINE.* A modem status panel shows the telephone number your are dialling and the communication status.

6. To close the modem connection, click on *ONLINE*.

Note: If there is a communications failure or if you click on QUIT to close the program, this also disconnects the modem.

3.5 Instrument data on the internet

(For the internet option only - Contact us at www.gesensing.com) This option lets you send a 2-line instrument display (in real-time) to a specified data file on an internet server. Another user can then use the internet to log in and monitor the data.

Note: This software is only available for Windows NT networks that support Active Server Pages (ASP).

For correct operation, the software installation for the computer and the internet server must occur together. Refer to the installation instructions supplied with the software.

3.5.1 Set up the data from the instrument

You must set up the computer with the instrument connection to send the instrument data to the internet:

1. On the menu bar, click on *** *Setup > Internet* and set the applicable values:

(Where *** = PC6 Pro; DPI 104, IDOS, DPM)

Web address: (Agreed with the system administrator) The server location to which the SiCalPro software sends the data.

Example: http://SERVER NAME/sicalpro/extract.asp.

Password: (Agreed with the system administrator) A password that is sent with the instrument data to the server. To see the data, the other user must know the approved *Password* and the *Serial Number* for the instrument.

File Update rate: The rate (in seconds) at which data is sent to the web address.

Screen Refresh rate: The rate at which the internet page is refreshed.

Maximum no. of records: The number of records to display on the internet display.

2. When the *Internet* data is set up correctly, the software sends the instrument data to the specified web address. The instrument data includes the approved password, and the instrument serial number.

3.5.2 Log in to see the instrument data

To see the instrument data on the internet page correctly, the display and printer properties must have these settings:

Display resolution (Screen size): Set to 1024 x 768

Specified Printer: Set the output orientation to landscape. In portrait, the right hand side of the display is cut off.

Refer to your computer instructions or contact your system administrator.

When instrument data is available, use these steps to log in:

1. Type in the internet path to view the data.

Example: http://SERVER NAME/sicalpro/login.asp

2. On the login display, type in the approved *Password* and the instrument *Serial Number.*

Chapter 4: Instrument configuration

4.1 Introduction

This chapter gives a description of these items:

- the instrument configuration options in menu:

  *** *Setup* > *** *Setup* > *** *Configuration*
  (Where *** = PC6 Pro; DPI 104, IDOS, DPM)

- the procedure to set an instrument certificate number

- the special instrument options: Zero and Span
  (IDOS module/DPM); Daisy chain (DPI 104).

4.2 Configuration - Set or show settings

If you want to set or see the configuration settings for an instrument use menu:

  *** *Setup* > *** *Setup* > *** *Configuration*

To use this menu, the instrument must be *ONLINE*.

4.2.1 Configuration - PC6 instruments

Figure 4-1 shows an example display for the PC6 configuration window.

Figure 4-1: *Example display - Instrument configuration (PC6 Instruments)*

It is not possible to change the PC6 settings in this window (Language; Resolution; Log Status). To make changes to the instrument configuration, use menu:

  Mode > *Control*. Refer to Section 5.2.1.

4.2.2 Configuration – DPI 104 instruments

Figure 4-2 shows an example display for the DPI 104 configuration window.

Figure 4-2: *Example display - Instrument configuration (DPI 104 Instruments)*

You cannot change the settings (white) in the top half of this window. To change the units, use menu: *Units*

Button options **Cancel:** To cancel/close the operation and go back to the normal display.

Update Settings: To make the changes to the instrument.

Procedure You can change all the options or values shown in blue:

1. Click on the applicable option or value.

2. Use ▲ or ▼ (screen or keyboard) to change the options or values.

- *Event* and *Leak* settings: SiCalPro software functions for menu *Log!* and *Certificate*. Refer to Chapter 5.

Event: *Keyed* or *Timed*.

Keyed: The *Log!* function uses a key press to make a record.

Timed: The *Log!* function makes records at the specified time intervals (seconds, minutes, hours or days). Because the interval is for *Timed* and *Leak* operations, set *Leak* duration ≥ *Timed* interval.

Leak: The *Log!* and *Certificate* functions use the specified *Leak* duration to do a *Leak Test.* Set *Leak* duration ≥ *Timed* interval.

- All the other settings: DPI 104 instrument functions (refer to the instrument user manual)

3. To accept the settings, click on *Update Settings* and wait for the software to make the changes to the instrument.

4. To close the window, click on *Cancel*.

4.2.3 Configuration - IDOS/DPM instruments

Figure 4-3 shows an example display for the DPM configuration window. The IDOS module is almost the same.

Figure 4-3: *Example display - Instrument configuration (IDOS/DPM Instruments)*

You cannot change the settings (white) in the top half of this window. To change the units, use menu: *Units*

Button options **Exit:** To cancel/close the operation and go back to the normal display.

Update Settings: To make the changes to the instrument.

Reset Zero: To do a permanent zero offset to the instrument.

Procedure You can change all the options or values shown in blue:

1. Click on the applicable option or value.

2. Use ▲ or ▼ to change the options or values:

• *Event* and *Leak* settings: These are SiCalPro software functions for menu *Log!* and *Certificate*. Refer to Chapter 5.

Event: *Keyed* or *Timed*.

Keyed: The *Log!* function uses a key press to make a record.

Timed: The *Log!* function makes records at the specified time intervals (seconds, minutes, hours or days). Because the interval is for *Timed* and *Leak* operations, set *Leak* duration ≥ *Timed* interval.

Leak: The *Log!* and *Certificate* functions use the specified *Leak* duration to do a *Leak Test*. Set *Leak* duration ≥ *Timed* interval.

- All the other settings:

Alarm: Set the 'Low' and 'High' alarm values.

Resolution: Low, Normal or High. Set the resolution that the simulation display uses for the pressure reading. The Resolution changes by a factor of 10.

ADC Sample C: (ADC Sample Count) Set the number of samples taken in each average. Default: 25 samples.

Baud Rate: The data transmission rate for the instrument (in bits per second). Usually this is 9600.

Stop Bits: To indicate the end of a data word. Usually this is set to 1.

3. To accept the settings, click on *Update Settings* and wait for the software to make the changes to the instrument.

4. To close the window, click on *Exit*.

4.3 Set a certificate number

You can set a certificate number for an instrument (for example: to keep a record of the last calibration certificate):

1. In the menu bar, click on:

 *** *Setup* > *** *Setup* > *Instrument Certificate Number*

2. Type in the applicable text and numeric characters

3. To accept the settings, click on *OK*.

4.4 IDOS/DPM instruments - Zero and Span

There are three calibration options for the IDOS module/DPM instruments in menu *** *Setup* > *** *Setup* > :

Zero/Span: (with password protection) To do a zero and span calibration.

Abort Zero/Span: To stop the zero or span calibration.

History: To show the last calibration date, span date and the overload history.

To use these menu options, the instrument must be *ONLINE*.

Procedure (Zero/Span) Use this function only in the correct calibration conditions for the instrument:

- An applicable pressure standard (primary or secondary)

- A stable temperature environment

- Applicable special conditions

Refer to the instrument user manual.

Note: Note: GE can provide a calibration service that is traceable to international standards.

1. In the menu bar, click on:

    *** Setup > *** Setup > Zero/Span >

2. In the *Password* window, enter the last four digits of the instrument serial number and click on *OK*.

    The display shows the applicable instructions to complete the *Zero* calibration.

3. When the *Zero* calibration is complete, click on *OK*.

    The display shows the applicable instructions to complete the *Span* calibration.

4. When the *Span* calibration is complete, click on *OK*.

Note: The SiCalPro software can only complete a Span calibration on a DPM instrument if the temperature is 10 to 30°C (50 to 86°F) and Span is ±5% of the full scale value.

4.5 DPI 104 instruments - Daisy chain

If you have more than one DPI 104 instrument in a "daisy chain" network (refer to the instrument user manual), you can use these options in menu:

*** Setup > *** Setup > Daisy Chain ▶

Abort Daisy Chain: To stop "daisy chain" communications. The *Unit Mode* on the software display goes back to *Normal*.

Set Auto Address: To set a software address (00 to 99) for each DPI 104 in your network.

Select DPI in Daisy Chain: To select the instrument you want to work with. The *Unit Mode* on the software display shows *Daisy Chain*.

Procedure (Daisy Chain)

1. Make sure the "daisy chain" connections to your computer are correct (refer to the instrument user manual).

2. In the menu bar, click on:

*** Setup > *** Setup > Daisy Chain > Set Auto Address >

3. *Start Auto Address starting from 00 - Yes/No*:

To accept the *Auto Address* option, click on *Yes.* The software sets a number for each unit.

If the network connection is permanent, it is not necessary to do this every time you use the software

4. In the menu bar, click on:

*** Setup > *** Setup > Daisy Chain > Select DPI in Daisy Chain > See Figure 4-4.
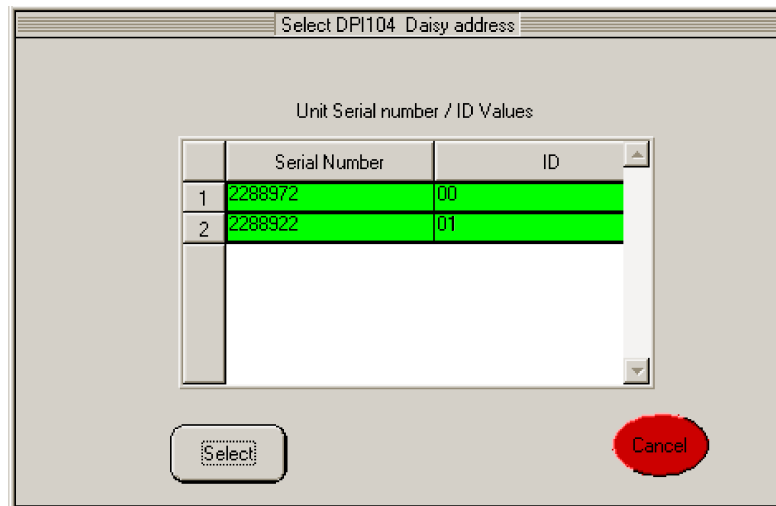
Figure 4-4: *Example display - Select DPI 104 Daisy address*

5. To select a DPI 104 instrument, click on one of the available options and click on *Select*. The *Unit Mode* on the software display shows *Daisy Chain*.

6. If necessary, you can move the selection window to one side and make other selections later. To close the window, click on *Cancel*.

7. To work with the specified DPI 104 instrument, click on *ONLINE.*

You continue to work with the specified instrument until you choose another instrument, stop the communications or close the software.

Chapter 5: Menu operations

5.1 Introduction

This chapter gives a description of the standard menu items:

- the *Mode* menu (*Control* or *Monitor*)

- the *File* menu to work with your *.log; *.imp; *.mon files (*View*, *Delete*, *Import*, *Print*, and *Convert*)

- the *Log!* menu to save your *Log* and *Leak Test* files

- the *Certificate* menu to set up and control your calibration certificates (*New*, *Edit*, *Print*, *Delete*)

5.2 Mode operations

Menu *Mode (Control* or *Monitor)* sets the operations that are available with an instrument. To use this menu, the instrument must be *ONLINE*.

The default mode of operation is *Monitor* (*Text*) mode. This shows the instrument output on a normal SiCalPro display (Figure 2-3).

5.2.1 Control Mode

Use menu: *Mode* > *Control* > See Figure 5-1

Only PC6 instruments can use *Control* mode. The *MENU*, *UP*, *DOWN*, *ENTER*, *PRINT/LOG*, and *ON/OFF* buttons are available to simulate operations on the instrument keypad (Figure 5-1).

Figure 5-1: *Example PC6 display - Control Mode*

To use the instrument keypad, refer to the instrument user manual.

Note: *The **Log!** menu is not available in **Control** mode. If necessary, store the data on the PC6 instrument and export it to the SiCalPro software later.*

5.2.2 Monitor Mode

Use menu: *Mode* > *Monitor* ▶ (*Graphical* or *Text*) >

- *Monitor* (*Text*) mode shows the instrument output on a normal SiCalPro display (See Figure 2-3).

- *Monitor* (*Graphical*) mode shows the instrument output in a two-graph window format (See Figure 5-2).

Figure 5-2: *Example display - Graphical Mode*

Display information The top graph shows pressure values. The bottom graph shows an additional value applicable to the instrument.

- PC6 instruments: Use *Control* mode to set the bottom graph value (volts, mV, mA, °C, maximum, minimum, % and tare). Other PC6 values are not available.

- DPI 104 instruments: Use the *Bottom Line* menu to set the bottom graph value (maximum, minimum, %, switch).

- IDOS module/DPM instruments: Use the *Function* menu to set the bottom graph value (maximum, minimum, tare, %, °C).

The display includes: instrument serial number; record start time and date; total number of records; alarm conditions, maximum/minimum and real-time output for the two graphs.

Button options **SAVE:** To save a graph record to a *.mon file. Set an applicable file name and file location. You can then use menu *File* to *View* and *Print* the results.

START: To start a new graph record. This discards the old set of records.

STOP: To stop a graph record.

Cancel: To cancel/close the operation and go back to the normal display.

5.3 File operations

Menu *File* lets you work with the data files saved for an instrument (*.log; *.imp; *.mon files only).

You can: View, Delete, Import (PC6 instruments only), Print, and Convert files (convert to a Microsoft Excel spreadsheet or a Microsoft Word document).

5.3.1 View files

1. Use menu: *File* > *View* ▸ (*Graphical* or *Text*). A file selection window opens.

2. If necessary, select a different *Directory.* Then select a file name from the list and click on *OK. >*

- *View* (*Graphical*) shows the specified instrument file in a two-graph window format that includes all the records (See Figure 5-3).

- *View* (*Text*) shows the specified instrument file in a text format - one record at a time (See Figure 5-4).
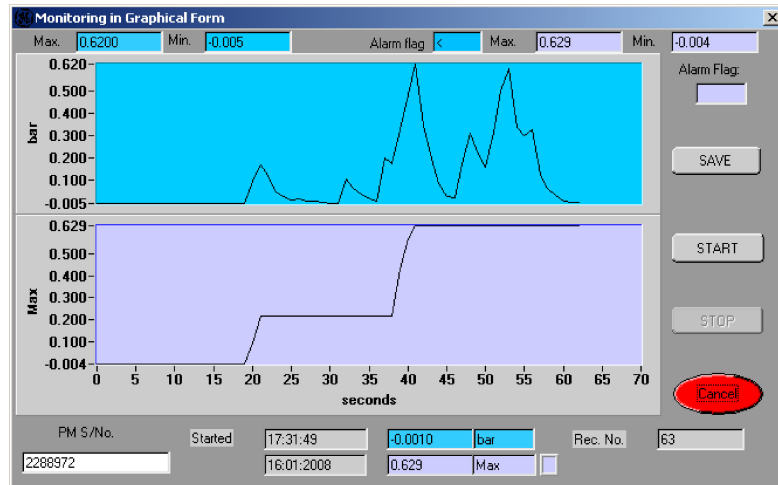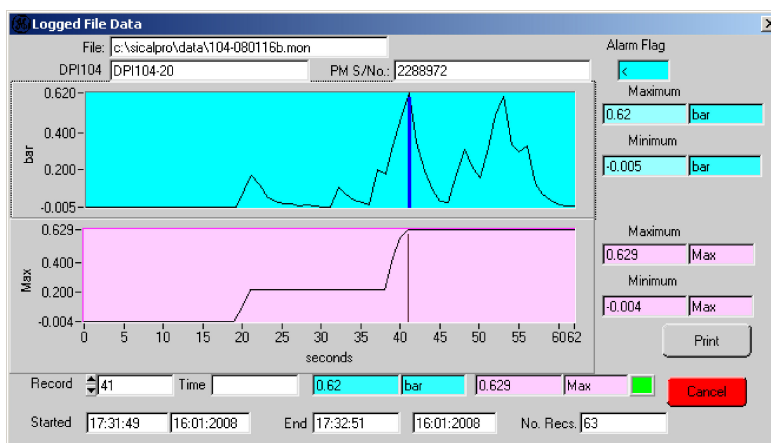

Figure 5-3: *Example display - Graphical view*

Display information   The top graph shows pressure values. The bottom graph shows an additional value applicable to the instrument. To set the bottom graph, refer to Section 5.2.2.

The display includes: file name and location; instrument type; instrument serial number; current record; record start time and date/end time and date; total number of records; alarm conditions, maximum/minimum and output values for the current record.

Button options   **Print:** To print the display for the specified record. A print window lets you set the necessary print options. If there is a print error, set the option to *Use Bitmap Printing*.

Record (▲ ▼): To go through the records in the file. For each change in record, a bar moves across the two graphs. (Alternative: Use your mouse to drag the bar across the graph).

Cancel: To cancel/close the operation and go back to the normal display.
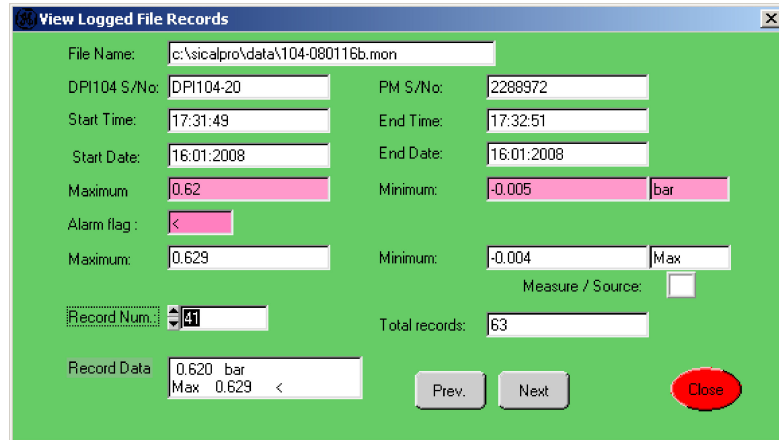
Figure 5-4: Example display - Text view

Display information   This display shows the data one record at a time.

Button options   **Record Num. (▲ ▼); Prev., Next:** To go through the records in the file.

Close: To close the window and return to the normal display.

5.3.2 Delete files   **1.** Use menu: *File > Delete*. A file selection window opens.

2. If necessary, select a different *Directory*. Then select a file name from the list and click on *OK. >*

3. *Delete File Yes/No*: To accept the *Delete File* option, click on *Yes.*

5.3.3 Import files   (PC6 instruments only) Use this option to import a log file (*.imp) from a connected PC6 instrument. The *.imp files can contain data from a completed calibration procedure or normal log data.

Procedure   **1.** Connect the PC6 instrument and click on *ONLINE*

2. Use the file export procedure for the PC6 instrument. Refer to the instrument user manual.

3. Use the SiCalPro software menu: *File > Import*. A file selection window opens.

4. Select a file name from the list and click on *OK.*

5.3.4 Print files

1. Use menu: *File* > *Print*. A file selection window opens.

2. If necessary, select a different *Directory.* Then select a file name (*.log; *.imp; *.mon) from the list and click on *OK.* >

The file prints to the default printer for your computer as unformatted text. If the output is incorrect, adjust the printer settings or use the option *File* > *View* > *Graphical* > *Print.*

5.3.5 Convert files

Use this option to convert a file (*.log; *.imp; *.mon) to Microsoft Excel or Microsoft Word format.

Note: Make sure the file paths for these programs are set up correctly in menu: *** Set Up > File Convert Path.

Procedure

1. Use menu: *File* > *Convert*. A file selection window opens.

2. If necessary, select a different *Directory.* Then select a file name from the list and click on *OK.* > *See* Figure 5-5.
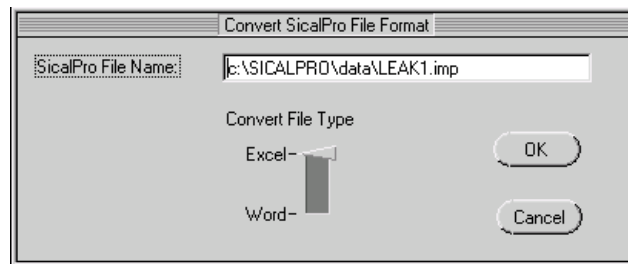
Figure 5-5: Example display - Convert window

3. Select one of the options (*Excel* or *Word*) and click on *OK.* > See Option 1 / Option 2

Option 1

Convert File Type (Excel): Starts the Microsoft Excel program and puts the data into the default file: SICALPRO.XLS (new data replaces old data).

To keep the data, save the file with a different file name and/or save it to another directory.

Note: SICALPRO.XLS must stay in the default file location.

Option 2

Convert File Type (Word): Starts the Microsoft Word program and saves the data in the file: *.doc (* is your original file name).

If necessary, you can change the file name and/or move it to another file location.

5.4 Log! operations

Menu *Log!* makes a permanent record of the instrument operation (normal *Log* or *Leak Test*). To use this menu, the instrument must be *ONLINE*.

The data is collected in *a Text* or *Graphic* window format (Figure 5-7).

Starting procedure **1.** Use menu: *Log!* > See Figure 5-6
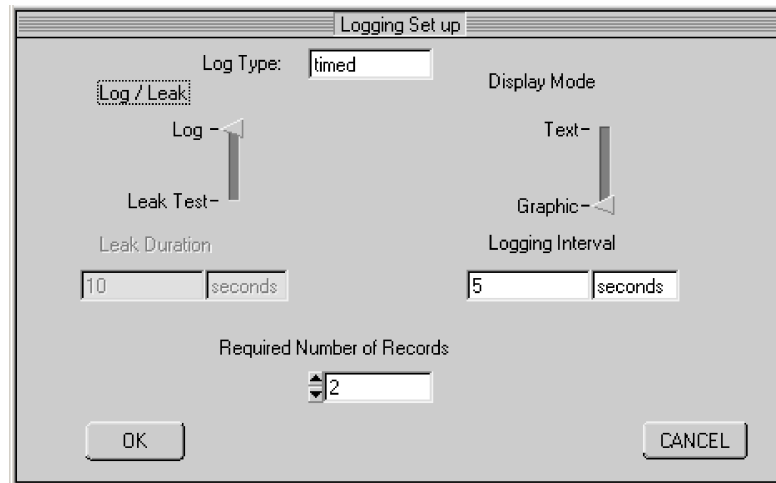
Figure 5-6: Example display - Logging set up

2. The *Log Type* (*Timed* or *Keyed Event*), and leak settings (*Leak Duration* and *Logging Interval*) are part of the instrument set up.

- PC6 instruments: To change the *Event* and *Leak* settings, use the instrument *Menu* button (See Section 5.2.1).

- DPI 104 and IDOS module/DPM instruments: To change the *Event* and *Leak* settings, use menu:

  *** Setup > *** Setup > *** Configuration (Chapter 4)

Procedure **1.** For *Log / Leak*: Select *Log*
(Log)
2. For *Display Mode:* Select *Graphic* or *Text.*

Figure 5-7 shows the difference between the two options.

3. Set the applicable ... *Number of Records* (▲ ▼).

4. To accept the settings, click on *OK.*

5. In the window that opens, set a file name and file location for the *.log file and click on *OK.* >

Figure 5-7 shows the type of display that you see and use for each option (*Graphic* or *Text* - specified in step 2).

Note: Figure 5-7 shows the displays when the Log Type is Keyed (records are made with the EVENT button). If the Log Type is Timed, the EVENT button is greyed out.

Button options (Log)

EVENT: *Log Type* (*Keyed*) only. Each time you select this key, you make a record of the instrument values.

START: To start the sequence of records.

STOP: To stop the sequence of records. You get the option to save the available records before the window closes.

Cancel or Abort: To cancel/close the operation and go back to the normal display.
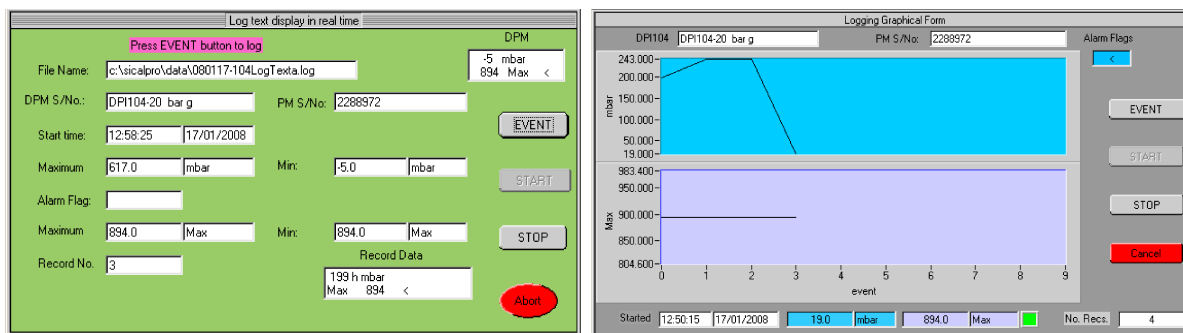
Figure 5-7: *Example display - Log (Text or Graphic)*

6. To start a set of records, click on *START. >*

Log Type (*Keyed*): Click on *EVENT* to make each record. When you reach the number of records specified in step 3, you get a *Logging* message ("... File stored").

Log Type (*Timed*): The software uses the specified *Logging Interval* until it reaches the number of records specified in step 3. You get a *Logging* message ("... File stored").

7. When you get the *Logging* message, click on *OK*. The normal display is available again.

Procedure (Leak Test)

Note: PC6 instruments only. The instrument display must show Leak: Start Set-Time Exit (Refer to the instrument user manual).

1. For *Log / Leak*: Select *Leak Test*

2. For *Display Mode:* Select *Graphic* or *Text.*

Figure 5-8 shows the difference between the two options.

3. To accept the settings, click on *OK.*

Note: The software uses the specified Leak Duration and Logging Interval to set the number of records automatically. (Minimum: 2 for the Leak Duration + 1 start record). Refer to the Log! starting procedure.

Figure 5-8 shows the type of display that you see and use for each option (*Graphic* or *Text* - specified in step 2).

Note: The Log Type (Keyed or Timed) does not affect the Leak Test display.

Button options (Leak Test)

START: 1) To set a file name and file location for the *.log file; 2) To start a new sequence of records. Each time you click on *START*, you overwrite the data in the specified file.

DoCert: *Graphic* mode only. To go to the *Certificate* function and set the certificate data for a *Leak* calibration certificate. Refer to Section 5.5.2, Figure 5-10.

Cancel: 1) *Log!* function: To cancel/close the operation and go back to the normal display. 2) *Certificate* function: See *DoCert.*
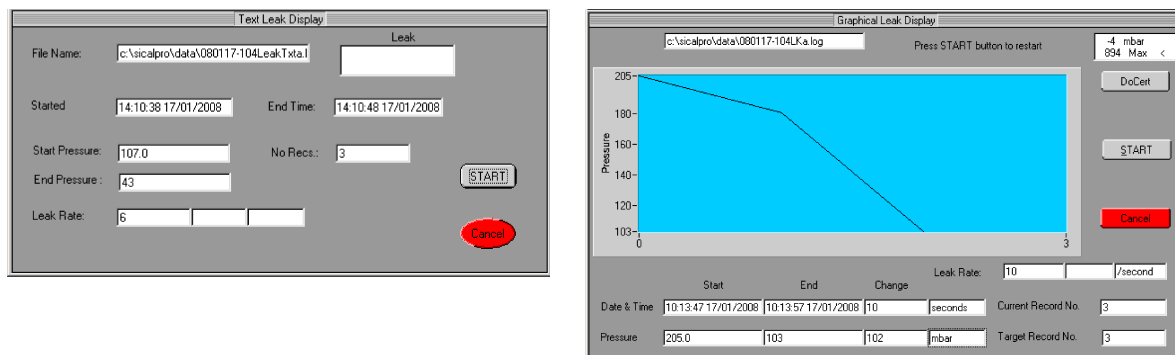
Figure 5-8: *Example display - Leak Test (Text or Graphic)*

4. Click on *START.* In the window that opens, set a file name and file location for the *.log file and click on *OK.*

5. To start a set of records, click on *START* again.

When the software has the correct number of records, you get a *Logging* message ("... File stored").

6. When you get the *Logging* message, click on *OK.*

7. If necessary, do steps 5 to 6 again until you have the correct data.

8. To close the window, click on *Cancel.*

Procedure (Leak certificate)

9. To use the data for a calibration certificate, click on *DoCert.* > *See* Section 5.5.2, Figure 5-10. Use the specified procedures to complete a *Leak* calibration certificate with *Live Data.*

5.5 Certificate operations

Menu *Certificate* lets you set up and control the calibration certificates for an instrument. These functions are available:

- *New*: To make a new calibration certificate (*Normal* or *Leak*) with *Stored Data* (*.log; *.imp files) or *Live Data*. You can use this function to *View*, *Print* or *Save* the certificate.

- *Edit*: To change some of the data on a calibration certificate. You can use this function to *View*, *Print* or *Save* the certificate.

- *Print*: To print a calibration certificate (*.txt file) to the default printer for your computer.

- *Delete*: To delete the files (*.cer and *.txt) for a calibration certificate. This is a two-step approval procedure.

In menu *** Setup*, you can set up a password for this function. You can also set standard header/footer text; set a standard adjustment to the printed layout; set a standard name for *Calibrated by: ...* . For these *Setup* options, refer to Table 2-2.

5.5.1 Set a Certificate password

To set a password for the *Certificate* menu, select *** Setup >*
Change Password (See Table 2-2).

If you set a password, you must enter the password the first time you want to use a *Certificate* function (the password is case sensitive). You do not have to enter it again unless you close down the software.

5.5.2 New calibration certificates

The starting procedure for a *New* calibration certificate (*Normal* or *Leak*) is almost the same.

Note: *If you are going to use Live Data, make sure the instrument is set up correctly (refer to the instrument user manual) and make sure it is ONLINE.*

Starting procedure (Normal/Leak)

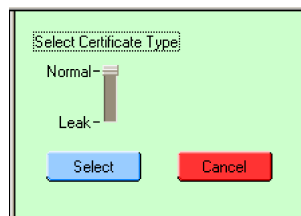**1.** Use menu: *Certificate > New > See Figure 5-9*

Figure 5-9: *Example display - Certificate Type selection*

2. Set the certificate type (*Normal* or *Leak*).

3. Click on *Select > See Figure 5-10*

*Button options
(Normal/Leak)*

Stored Data: To make a *Normal* or *Leak* calibration certificate with data you have saved or imported (See Section 5.5.3).

Live Data: To make a *Normal* or *Leak* calibration certificate with *Live Data* from an *ONLINE* instrument (See Section 5.5.4).

View: To see the calibration certificate with all the specified data. This includes your setting for *Certificate Layout* in menu **** Setup* (Table 2-2). Use *View* before you use *Print Cert*.

Print Cert: To print the calibration certificate to the default printer for your computer (the certificate must include *Stored* or *Live Data*). The file prints immediately.

Save: To save the calibration certificate (the certificate must include *Stored* or *Live Data*). Set an applicable file name and file location. This function makes two files: *.txt and *.cer.

Cancel: To cancel/close the operation and go back to the normal display.

Figure 5-10: *Example display - Certificate of calibration*

4. Set the necessary data:

- the *Test* and *Standard Instrument data* (See Table 5-1)

- the *Stored Data* (See Section 5.5.3)
  or *Live Data* (See Section 5.5.4).

When the *Stored Data* / *Live Data* procedures are complete, you come back to this display. You can use the button related to your initial selection *(Stored Data / Live Data)* and the other buttons. If necessary, you can make more changes.

Table 5-1: *Data for the Certificate of calibration*

Heading/ Options	Description
Test Instrument Details: The data for the instrument you are calibrating.	
Serial No / Description	Enter the serial number and a description (Maximum: 20 characters).
Certificate No	Enter a number for the calibration certificate (Maximum: 20 characters).
Date of Issue	Default: current date. Delete or overwrite the current date (Maximum: 10 characters).
Accuracy(%FS) ▲ ▼	For *Normal* certificates: Enter a value or use ▲ ▼ to set the accuracy limit as a percentage of the full scale (FS) range. If the *Instrument Reading* and the *Applied Pressure* are not in the calculated limits, the calibration entry has a " * " = *Outside Accuracy Statement*.
Leak Rate Spec ▲ ▼	For *Leak* certificates: Enter a value or use ▲ ▼ to set a leak rate limit. The units are in the *Stored* or *Live Data* (instrument configuration - Chapter 4). If the *Instrument Leak Rate* is more than the *Leak Rate Spec.*, the certificate shows "FAILED".
Range	The pressure range for the certificate. For *Normal* certificates, this is set as part of the *Stored* or *Live Data* (Figure 5-11/5-14). The software uses the *Range* to set the certificate pass/fail condition. For *Leak* certificates (Information only): Enter an applicable pressure range (Maximum: 26 characters).
Standard Instrument Details: The data for the instrument you are using as a standard.	
Serial No	Permanent data. The serial number of the instrument (set in the *Stored Data or* set by the *ONLINE* instrument).
Description	Enter an applicable description.
Accuracy(%FS) ▲ ▼	Information only. Enter a value or use ▲ ▼ to show the accuracy as a percentage of the specified full scale (FS) range.
Header	Enter up to two lines of header text to go above the *Results* section of the certificate. Standard header text is set in menu: *** *Setup > Certificate Header/Footer* (See Table 2-2).
Footer	Enter up to four lines of footer text to go below the *Results* section of the certificate. Standard footer text is set in menu: *** *Setup > Certificate Header/Footer* (See Table 2-2).
User Name	Enter a name to go on the certificate (*Calibrated by*: ...). You can set a standard user name in menu: *** *Setup > User Names* (See Table 2-2).

5.5.3 Certificates with Stored Data

You can use *Stored Data* to make a calibration certificate (*Normal* or *Leak*) with data you have saved or imported:

- **.log* files from menu: *Log!* (See Section 5.4) OR

- **.imp* files from a PC6 instrument; menu: *File > Import* (See Section 5.3.3)

Procedure
(Stored Data - Normal)

To make a *Normal* calibration certificate with *Stored Data:*

1. In Section 5.5.2, Figure 5-9: Set the *Certificate Type* to *Normal;* In Figure 5-10: Click on *Stored Data.* A file selection window opens.

2. If necessary, select a different *Directory.* Then select a file name (*.log or *.imp) from the list and click on *OK. >* See Figure 5-11.

Description
(Figure 5-11)

The software uses this data to set the *Range* on Figure 5-10. It also uses the range data to calculate the calibration errors.

Button options

OK: To accept the data (or accept changes to the data) and continue to the next display (See Figure 5-12).

You can come back to this display and make more changes during the calibration. If you make no changes, use *OK* to go back to Figure 5-10.

Cancel: To cancel/close the operation and go back to step 2 (you can make another file selection). If you accept the file but come back to change the data, *Cancel* shows Figure 5-10.

Figure 5-11: *Example display - Certificate Unit Parameters (Normal certificate with Stored Data)*

3. Set the applicable values for the *Stored Data.* Enter a new value or use ▲ ▼.

For a *Transducer* or *Transmitter*: Set the *Zero* and *Full Scale Range.*

For an *Indicator*: Set these items:

- *Resolution* (Maximum: This is set by the instrument that made the file).

- *Zero* and *Full Scale* values for *Range.* The default values are set by the instrument that made the file.
Permitted values: -1 bar/-14.5 psi to FS range.

Values (greyed out): Set by the instrument that made the file or not applicable.

4. To accept the settings, click on *OK* > See Figure 5-12

Button options (Figure 5-12) **Prev., Next:** To highlight a row and change the data.

Setup Panel: To go back to step 3 (Figure 5-11) and make changes to the data.

Main Cert. Panel: To go back to the *Certificate of Calibration* display (Figure 5-10).

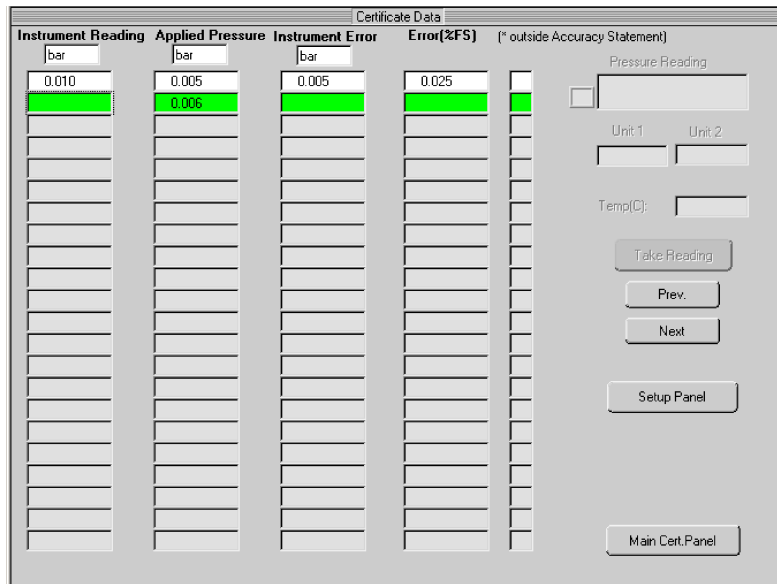***Figure 5-12:*** *Example display - Certificate Data (Normal certificate with Stored Data)*

5. For each calibration point, set an applicable *Instrument Reading* value. The software calculates the error values (*Instrument Error*, *Error(%FS)*) and the highlight moves to the next row.

To calculate the error values, the software uses the *Full Scale* range (Figure 5-11) and the " *Accuracy(%FS)* " (Table 5-1).

If the *Instrument Reading* and the *Applied Pressure* are not in the specified limit, the calibration entry has a " * " = *Outside Accuracy Statement*.

6. If necessary, you can delete an *Instrument Reading* value and set a new value. You can also use the *Setup Panel* and *Main Cert. Panel* buttons to make changes to your certificate data.

7. If necessary, do step 5 again for the applicable calibration points.

8. To complete the *Certificate* operation, go back to the *Certificate of Calibration* display (Figure 5-10) and use the applicable button options: *View*, *Print Cert.*, *Save, Cancel*.

Procedure (Stored Data - Leak) To make a *Leak* calibration certificate with *Stored Data:*

1. In Section 5.5.2, Figure 5-9: Set the *Certificate Type* to *Leak;* In Figure 5-10: Click on *Stored Data.* A file selection window opens.

2. If necessary, select a different *Directory.* Then select a file name (*.log or *.imp) from the list and click on *OK.* > See Figure 5-13.

Figure 5-13: *Example display - Leak Results (Leak certificate with Stored Data)*

3. You cannot change this display. To close the file, click on *OK* > See Figure 5-10.

If the *Instrument Leak Rate* is more than the *Leak Rate Spec.*, the certificate shows "FAILED".

4. If applicable, make changes to your certificate data (See Table 5-1).

5. To complete the *Certificate* operation, use the applicable button options: *View*, *Print Cert.*, *Save, Cancel*.

5.5.4 Certificates with Live Data

You can make a *Normal* or *Leak* calibration certificate with *Live Data*. Make sure the instrument is set up correctly (refer to the instrument user manual) and make sure it is *ONLINE*.

Procedure (Live Data - Normal)

To make a *Normal* calibration certificate with *Live Data:*

1. In Section 5.5.2, Figure 5-9: Set the *Certificate Type* to *Normal;* In Figure 5-10: Click on *Live Data.* > See Figure 5-14

Description (Figure 5-14)

The software uses this data to set the *Range* on Figure 5-10 and the calibration points (*Instrument Reading* values) on Figure 5-15. It also uses the range data to calculate the calibration errors.

Button options

OK: To accept the data (or accept changes to the data) and continue to the next display (Figure 5-15).

You can come back to this display and make more changes during the calibration. If you make no changes, use *OK* to go back to Figure 5-10.

Cancel: To cancel/close the operation and go back to the *Certificate of Calibration* display (Figure 5-10)

Figure 5-14: *Example display - Certificate Unit Parameters (Normal certificate with Live Data)*

2. Set the applicable values for the attached instrument. Enter a new value or use ▲ ▼.

For a *Transducer* or *Transmitter*: Set the *Zero* and *Full Scale* values for *Output* and *Range.*

For an *Indicator*: Set these items:

- *Resolution* (Maximum: 5 decimal places)

- *Zero* and *Full Scale* values for *Range.*
  Permitted values: -1 bar/-14.5 psi to FS range.

- *No of Points (*number of calibration points) for *Vacuum.* Only
  available if the *Zero* range value is negative (-0.1 to
  -1 bar/-14.5 psi). AND

  *No of Points (*number of calibration points) for *Pressure.*

  Permitted values (*Vacuum/Pressure)*: 0 or more than 1
  (Total of all points: More than 2 but ≤ 22).

3. To accept the settings, click on *OK* > See Figure 5-15

*Description
(Figure 5-15)*   Figure 5-15 shows the pressure and temperature readings on
the instrument (*Live Data*).

The software calculates a set of *Instrument Reading* values
(calibration points) from the *Zero/Full Scale* range and *No of
Points* (Figure 5-14).

Button options   **Take Reading:** To use the pressure value on the instrument
and get the applicable calibration error.

Prev., Next: To highlight a row and change the data.

Setup Panel: To go back to step 2 (Figure 5-14) and make
changes to the data.

Main Cert. Panel: To go back to the *Certificate of Calibration*
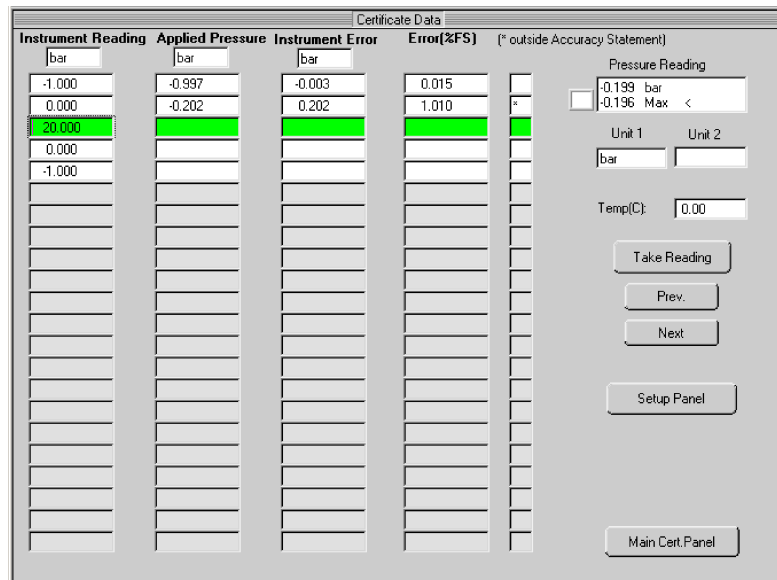display (Figure 5-10).

Figure 5-15: *Example display - Certificate Data
(Normal certificate type)*

4. For each calibration point, apply the necessary pressure to the instrument and click on *Take Reading*. The software calculates the error values (*Instrument Error*, *Error(%FS)*) and the highlight moves to the next row.

To calculate the error values, the software uses the *Full Scale* range (Figure 5-11) and the " *Accuracy(%FS)* " (Table 5-1).

If the *Instrument Reading* and the *Applied Pressure* are not in the specified limit, the calibration entry has a " * " = *Outside Accuracy Statement*.

5. If necessary, you can delete an *Instrument Reading* value and set a new value. You can also use the *Setup Panel* and *Main Cert. Panel* buttons to make changes to your certificate data.

Note: *You cannot change the specified " Accuracy(%FS) " a*fter *a Live calibration sequence.*

6. If necessary, do step 4 again for the applicable calibration points.

7. To complete the *Certificate* operation, go back to the *Certificate of Calibration* display (Figure 5-10) and use the applicable button options: *View*, *Print Cert.*, *Save, Cancel*.

Procedure   The leak settings (*Leak Duration* and *Logging Interval*) are part *(Live Data - Leak)*   of the instrument set up.

- PC6 instruments: To change the *Leak* settings, use the instrument *Menu* button (See Section 5.2.1).

- DPI 104 and IDOS module/DPM instruments: To change the *Leak* settings, use menu:

  *** *Setup* > *** *Setup* > *** *Configuration* (Chapter 4)

The software uses the specified *Leak Duration* and *Logging Interval* to set the number of records. Minimum: 2 for the *Leak Duration* + 1 start record.

To make a *Leak* calibration certificate with *Live Data.*

1. PC6 instruments only. The instrument display must show *Leak: Start Set-Time Exit* (Refer to the instrument user manual).

2. In Section 5.5.2, Figure 5-9: Set the *Certificate Type* to *Leak;* In Figure 5-10: Click on *Live Data.* > See Figure 5-16.

Button options (Figure 5-16)

START: 1) To set a file name and file location for the *.log file; 2) To start a new sequence of records. Each time you click on *START*, you overwrite the data in the specified file.

DoCert: To go back to Figure 5-10 and set the certificate data for a *Leak* calibration certificate.

Cancel: To go back to Figure 5-10.
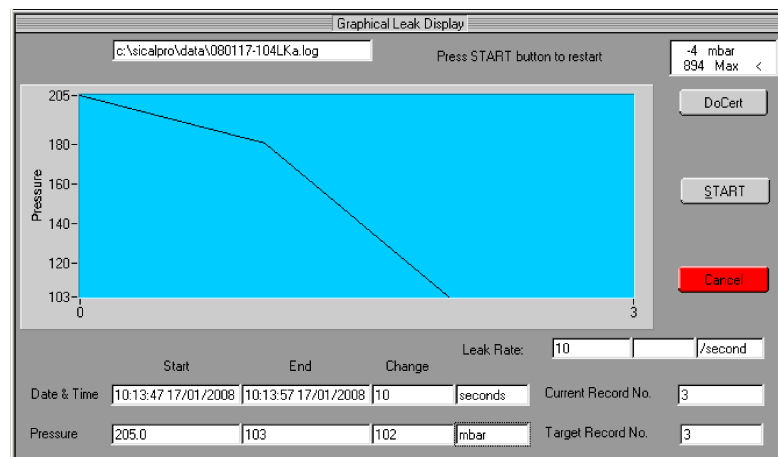
Figure 5-16: Example display - Leak Test

3. Click on *START.* In the window that opens, set a file name and file location for the *.log file and click on *OK.*

4. To start a set of records, click on *START* again*.*

When the software has the correct number of records, you get a *Logging* message ("... File stored").

5. When you get the *Logging* message, click on *OK.*

6. If necessary, do steps 4 to 5 again until you have the correct data.

7. To complete the *Certificate* operation, go back to the *Certificate of Calibration* display (Figure 5-10) and use the applicable button options: *View, Print Cert., Save, Cancel.*

5.5.5 Edit calibration certificates

You can use the *Edit* function to change these items on a *Normal* or *Leak* calibration certificate:

- *Test Instrument Details*: *Description*, *Certificate No*, *Accuracy(%FS)* - on a *Normal* certificate, *Leak Rate Spec* - on a *Leak* certificate.

  Note: *If you change the "Accuracy(%FS)", or the "Leak Rate Spec", the change goes on the certificate. The results do not change in the Stored Data.*

- *Standard Instrument Details*: *Description*.

- Certificate format: *Header/Footer* text and *User Name*.

Procedure (Edit certificates)

1. Use menu: *Certificate > Edit*. A file selection window opens.

2. If necessary, select a different *Directory.* Then select a file name (*.cer) from the list and click on *OK.* > See Figure 5-17
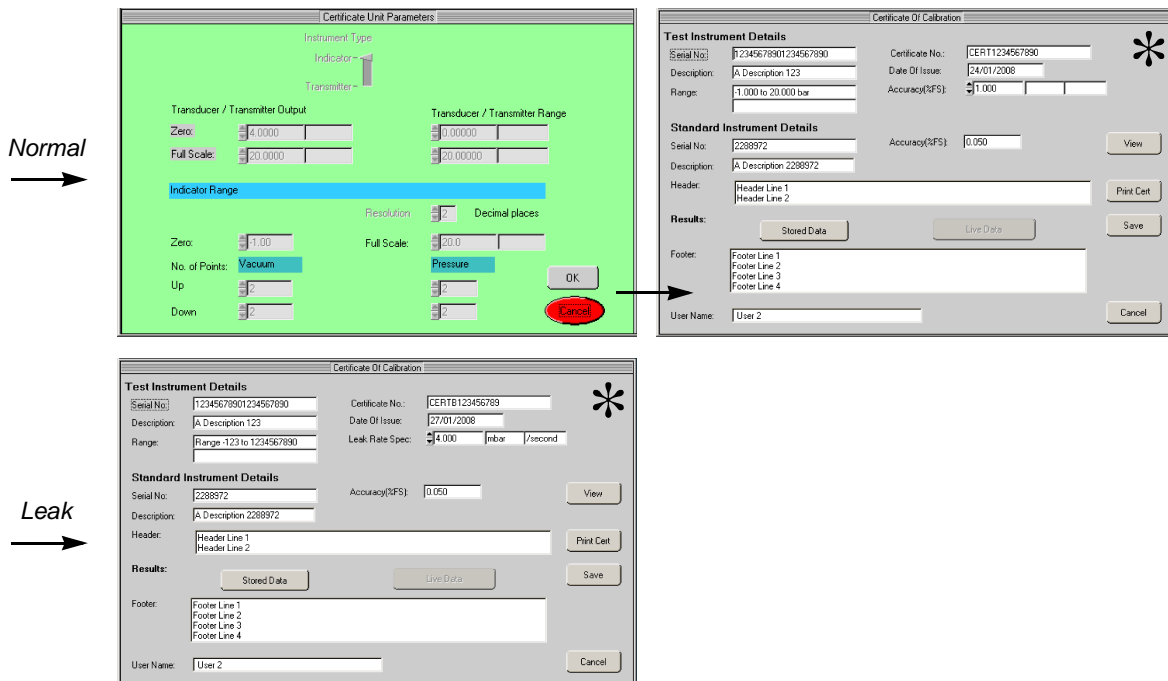

Figure 5-17: Example display - Edit sequence (Normal or Leak)

3. Make the applicable changes to the certificate data.

4. To see the original calibration data, click on *Stored Data*. You cannot change it.

5. To complete the *Certificate* operation, go back to the *Certificate of Calibration* display (∗) and use the applicable button options: *View, Print Cert., Save, Cancel.* See below.

Button options (Normal/Leak)

View: To see the calibration certificate with all the specified data. This includes your setting for *Certificate Layout* in menu **** Setup* (Table 2-2). Use *View* before you use *Print Cert.*

Print Cert: To print the calibration certificate to the default printer for your computer. The file prints immediately.

Save: To save the calibration certificate. Set an applicable file name and file location. This function makes two files: *.txt and *.cer.

Cancel: To cancel/close the operation and go back to the normal display.

5.5.6 Certificates - View before you print

To make sure a certificate prints correctly, you can use the *View* button in these menu options:

- menu *Certificate > New* (Section 5.5.2) > See Figure 5-10.

- menu *Certificate > Edit* (Section 5.5.5) > See Figure 5-17.
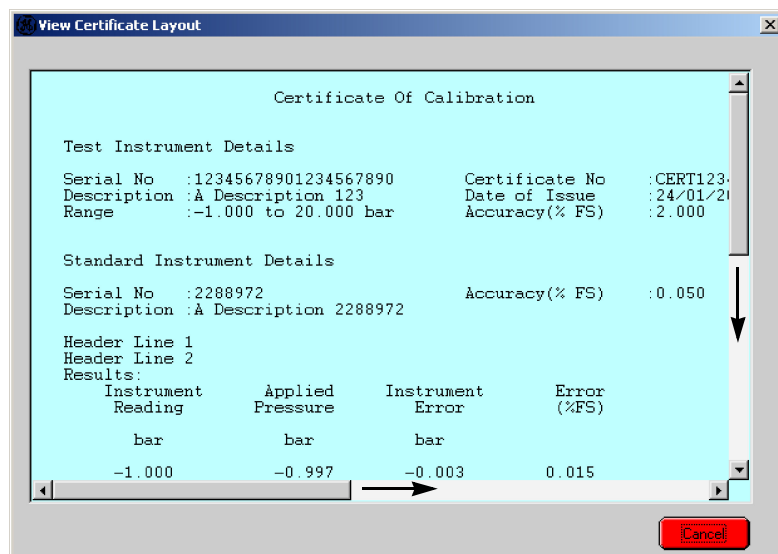
Figure 5-18: *Example display - Certificate View option*

Procedure (View)

1. When all the data is set up (Section 5.5.2 or 5.5.5), click on the *View* button to see the contents of the certificate. > See Figure 5-18.

2. To make more changes to the data or to change the *Certificate Layout,* click on *Cancel.*

3. To change your setting for the *Certificate Layout,* go to menu **** Setup* (Table 2-2). It is not necessary to leave the *Certificate* function.

4. When the content and the layout are correct, click on the *Print Cert* button.

5.5.7 Print a certificate

You can use one of these options to print a certificate:

Option 1 **1.** Go to one of these menus:

- For a *New* certificate: menu *Certificate* > *New* (Section 5.5.2) > See Figure 5-10.

- For an available certificate: menu *Certificate* > *Edit* (Section 5.5.5) > See Figure 5-17.

2. To make sure the certificate prints correctly, click on the *View* button. See Section 5.5.6.

3. Click on the *Print Cert* button. The file prints to the default printer for your computer. It prints immediately. > See Figure 5-19.

Option 2 **1.** Use menu: *Certificate* > *Print.* A file selection window opens.

2. If necessary, select a different *Directory.* Then select a file name (*.txt) from the list and click on *OK.*

3. *Print Yes/No*: To accept the *Print* option, click on *Yes.* The file prints to the default printer for your computer. > See Figure 5-19.

```
                       Certificate Of Calibration


       Test Instrument Details

       Serial No    :12345678901234567890        Certificate No    :CERT1234567890
       Description :A Description 123             Date of Issue     :24/01/2008
       Range       :-1.000 to 20.000 bar         Accuracy(% FS)    :1.000


       Standard Instrument Details

       Serial No    :2288972                      Accuracy(% FS)    :0.050
       Description :A Description 2288972

       Header Line 1
       Header Line 2

       Results:
            Instrument        Applied      Instrument         Error
            Reading           Pressure        Error           (%FS)

              bar              bar            bar

            -1.000           -0.997         -0.003          0.015
             0.000           -0.005          0.005          0.025
            20.000           20.205          0.205          1.025   *
             0.000           -0.005          0.005          0.025
            -1.000           -0.996         -0.004          0.020


       Footer Line 1
       Footer Line 2
       Footer Line 3
       Footer Line 4

       Calibrated By  :  User 2                        Signature:
       ( * Outside Accuracy Statement )

       Document created using software SiCalPro Version: 2.03
```

Figure 5-19: *Example calibration certificate*

5.5.8 Delete a certificate

1. Use menu: *Certificate* > *Delete*. A file selection window opens.

2. If necessary, select a different *Directory.* Then select a file name (*.cer) from the list and click on *OK.*

3. *Delete File Yes/No*: To accept the *Delete File* option, click on *Yes.* This deletes the *.cer and the related *.txt file.

Chapter 6: Calibration procedures (for PC 6 instruments)

6.1 Introduction

Use this menu option to set up the calibration procedures you want to use with a PC6 instrument. These functions are available:

- *New*: To make a new calibration procedure.

- *Edit*: To change a calibration procedure saved in a *.cal file.

You can use these functions to *Print*, *Export*, or *Save* a calibration procedure.

6.2 New calibration procedures

To make a *New* calibration procedure:

1. Use menu: *Calibration* > *New* > See Figure 6-1

Figure 6-1: Example display - New calibration procedure

2. Set the necessary data for the *Test Instrument* and the *Calibration Points* (See Table 6-1).

3. To complete the calibration procedure, use the applicable button options: *Print*, *Export*, *Save, Exit.*

Button options **Print:** To print the display for the specified calibration point (*Cal point* ▲ ▼). A print window lets you set the necessary print options. If there is a print error, set the option to *Use Bitmap Printing.*

Export: To export a calibration procedure to a PC6 instrument. The instrument must be *ONLINE* and it must be in the correct menu to import a file. Refer to the instrument user manual.

Save: To save the calibration procedure and use it again or to make another procedure (*Edit*). Set an applicable file name (*.cal) and file location.

Exit: To cancel/close the operation and go back to the normal display.

Table 6-1: *Data for the calibration procedure*

Heading/ Options	Description
Test Instrument Details: Data about the instrument type that uses this procedure.	
Serial No / Description	Enter a serial number and a description to identify the procedure.
Type ▲ ▼	Use ▲ ▼ to set the type of instrument (Indicator, Transducer, Transmitter)
Accuracy(%FS) ▲ ▼	Enter a value or use ▲ ▼ to set the accuracy limit as a percentage of the full scale (FS) range. This limit is applied to each calibration point in the procedure.
Range ▲ ▼	The pressure range for the instrument type. Enter a value or use ▲ ▼. Set the necessary units ▼ (Bar, psi, ...). Transmitters only: Set the output values and units.
Calibration Points Details: The data for the specified calibration point (1 to N).	
Number of Cal Points	Shows the total number of calibration points (N) in the procedure (calculated from the number of Vacuum/Pressure Points).
Set text	Enter the instruction text that goes in front of "Cal point ... " (Set Cal point ...). During the procedure, the PC6 instrument shows this text with the related calibration point.
Vacuum Points Up/Down ▲ ▼	Enter a value or use ▲ ▼ to set the number of *Vacuum* calibration points.
Pressure Points Up/Down ▲ ▼	Enter a value or use ▲ ▼ to set the number of *Pressure* calibration points.
Cal point ▲ ▼ Value ▲ ▼	Enter a calibration point number (1 to N) and set the related pressure value.
Text	Enter the instruction text that goes after "Cal point ... ". During the procedure, the PC6 instrument shows this text with the related calibration point.

6.3 Edit calibration procedures

You can use the *Edit* function to change a calibration procedure or to make another procedure.

1. Use menu: *Calibration > Edit.* A file selection window opens.

2. If necessary, select a different *Directory.* Then select a file name (*.cal) from the list and click on *OK.* > See Figure 6-1

   The *Edit* display is almost the same.

3. You can change all the items specified in Table 6-1.

4. To complete the calibration procedure, use the applicable button options: *Print*, *Export*, *Save, Exit.*

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