



User's Guide to the iokeys.exe program

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Introduction

The **iokeys** compact data recorders measure and record data, sensed with built-in sensors. (For more details please visit the website: www.iokeys.com).

All iokeys instruments use the **iokeys.exe** program for communication with a computer running the Windows operating system. The computer (PC) **must** be equipped with one serial RS232 communications port (Com port).

Operating the iokeys.exe program

iokeys.exe is a program that communicates with the **iokeys** instruments. The program enables the setting of operational parameters of the instruments. The settings are: *measurement interval, start of recordings, current date and time.*

The program also handles data retrieval, data processing and graphical display of the data stored in the **iokeys** instruments.

Installing the software

Please extract the "iokeys_exe.zip" file. The software is installed by running the setup.exe in the "iokeys_exe" files folder. The operating system required for the program is Windows from Microsoft Corporation.

Running the iokeys.exe

A windows form is displayed on the computer screen, when the iokeys.exe starts. A menu is displayed in the top of the form (see fig. 1)



Fig. 1

The File menu

Start by creating directories for data and calibration files as displayed in fig. 2 and 3.

All datafiles are stored in the datafile directory when the data is downloaded from the instruments.

Creating the Datafile Directory

Click on the “Datafile Directory” with the mouse pointer.
The “Save Datafile Path” is displayed. Select or create a new directory.
(Example: *C:\iokeys\STL_Data*)

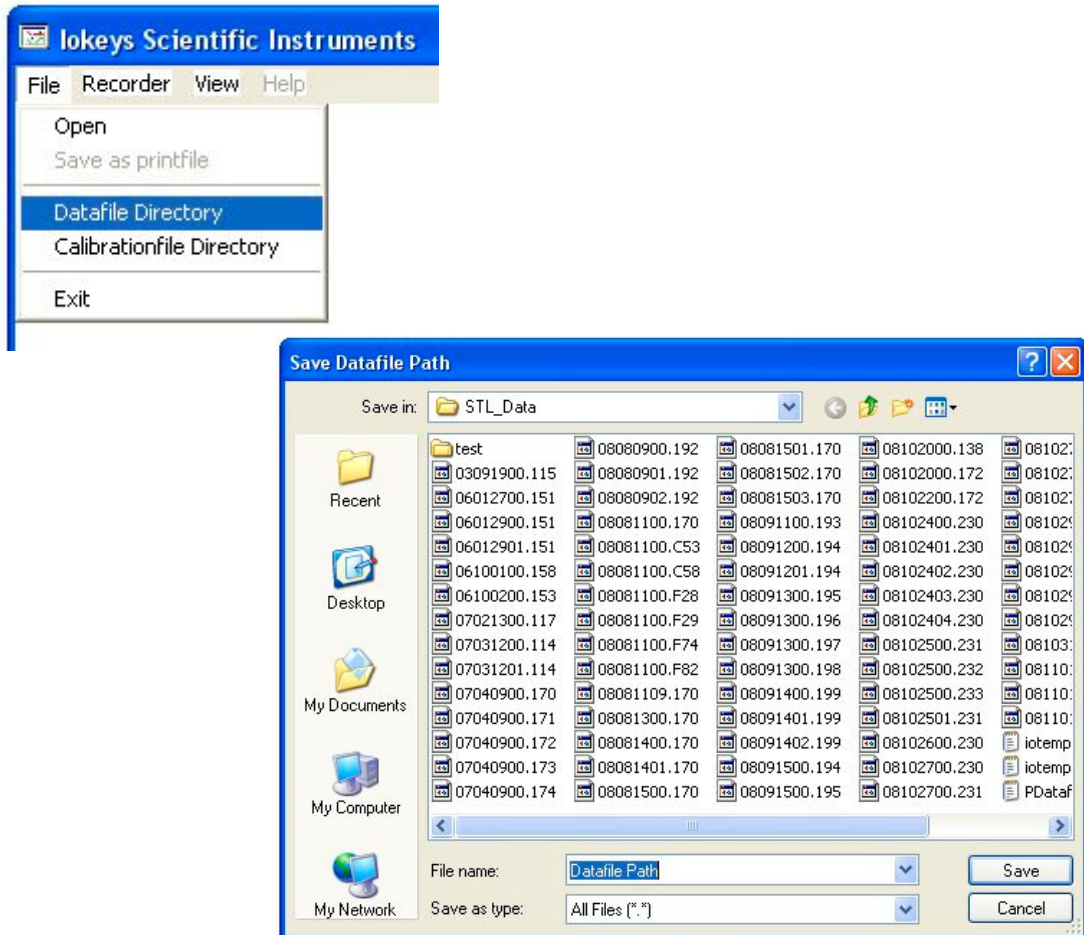


Fig. 2

The “Save Datafile Path” is displayed. Click “Save” when finished.

Creating the Calibrationfile Directory

Click on the “Calibrationfile Directory” with the mouse pointer.
The “Save Calibrationfile Path” is displayed. Select or create a new directory.
(Example: *C:\iokeys\STL_Cal*)

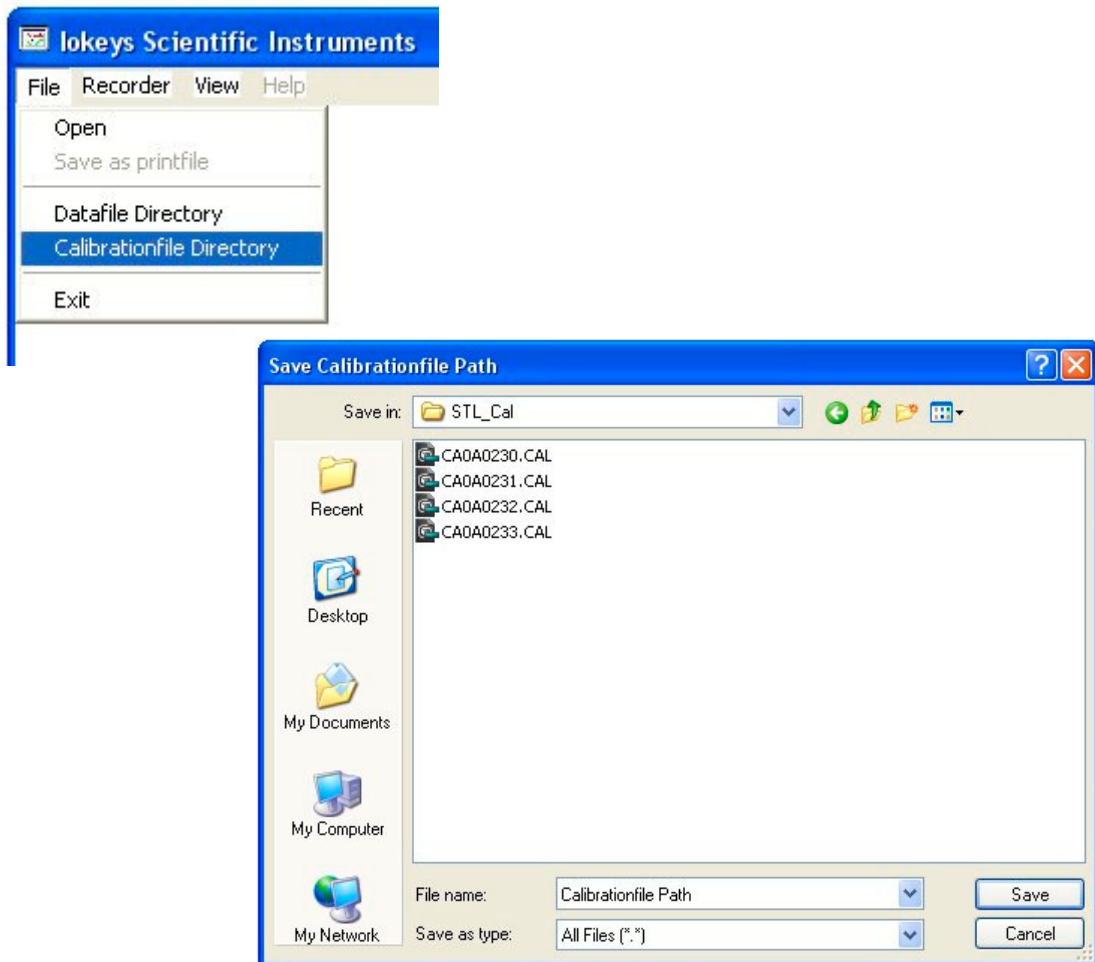


Fig. 3

The “Save Calibrationfile Path” is displayed. Click “Save” when finished.

Opening Datafiles

Now you can open a datafile by clicking on the open menu as in fig. 4. A dialog window appears. If available, select a datafile and click on "Open" or simply double click the filename. Only one datafile can be displayed at a time. For multiple datafile displays, other programs must be used i.e. Microsoft Excel or equivalent. This can be realized by using the print files that are available from *iokeys.exe*.

Datafiles are given names with dates and version. The three last digits are the instrument serial no. (three last digits of serial no.). Datafile "yymmddvv.ser" **yy** is for the year, **mm** for the month and **dd** is the day of the month. **vv** is the version of the last downloaded file from an instrument. This ensures that multiple datafile downloads will not be overwritten.

File naming example: a datafile from the instrument OA0232 on November 1st 2008 will have the file 08110100.232 The next file from the instrument on that same date will automatically get the filename 08110101.232 and so on for the same *data directory*.

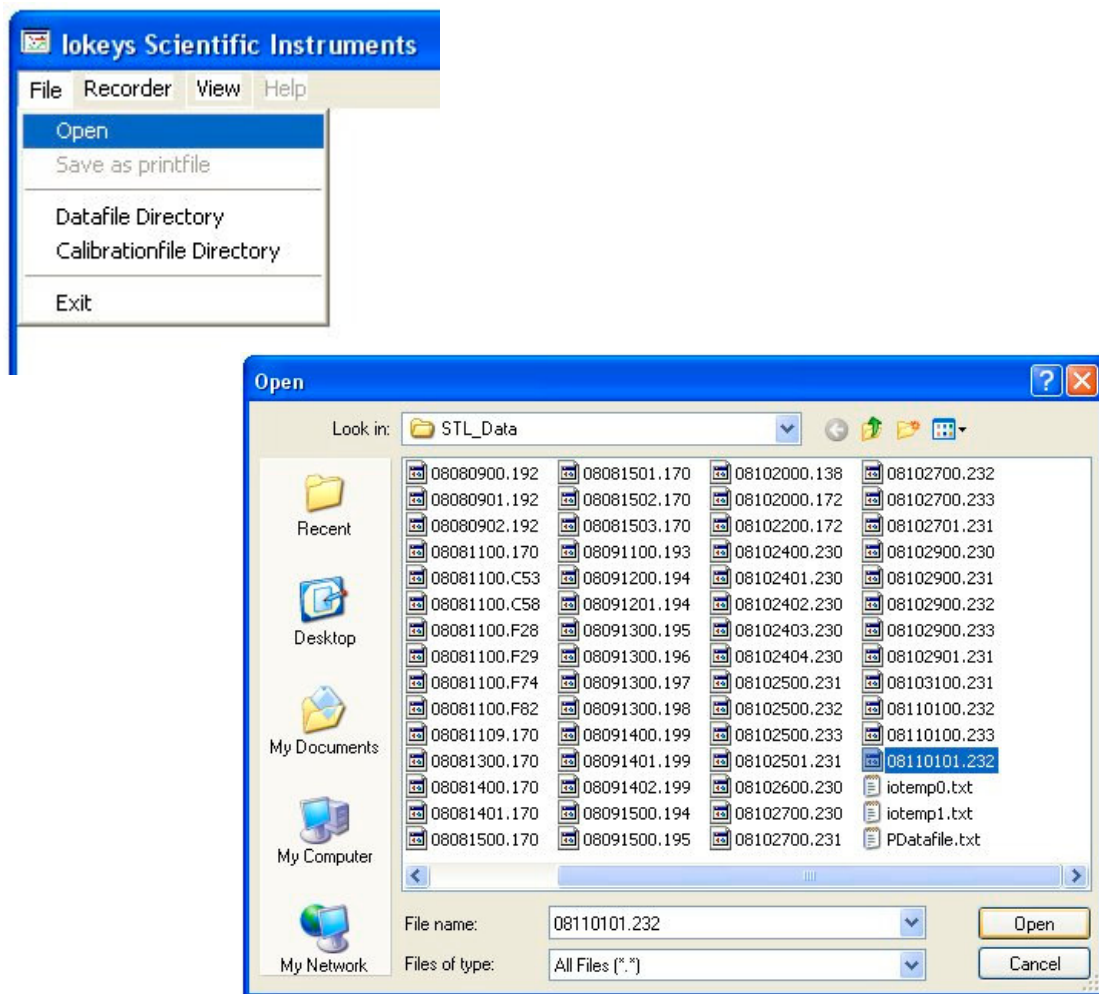


Fig. 4

Displaying the data from a datafile

The data in a datafile can be displayed by opening the datafile. The calibration file for the instrument needs to be in the "Calibration file" directory, so the calculation of the measured values can be performed. The instruments only store "raw" values that are in the range of 0000hex to 1000hex. The calibration files provide information of how to calculate the actual data in a given unit (kg, °C or %RH) for the instrument.

Note: raw data values can be displayed in the table of the iokeys program by setting the B constant equal to 1.0 in the calibration file.

Example: *Calibration file for STL-SA nr.:0A0231 A=0.0 B=1.0 C=0*

Please make a copy of the original calibration file before making any changes!

The graph in fig. 5 is displayed when a datafile is opened.

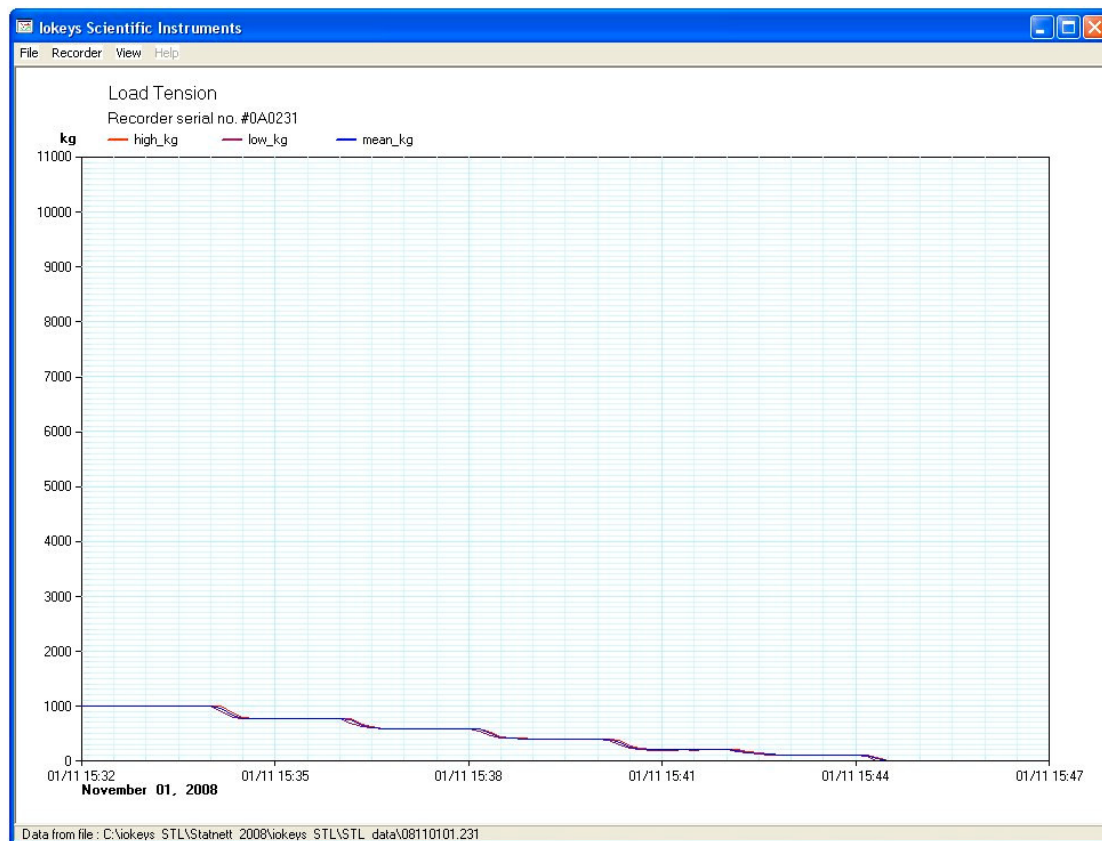


Fig. 5

This program is default for 10000kg max output.

Zooming in on the graph area

You can zoom in on the graph with the mouse pointer (left button). Press the left mouse button on any spot of the graph area and hold the button down, then drag the mouse over to the opposite corner of what you want to zoom in on. Then release the left button.

Clicking on the right mouse button restores the graph to the original display.

Fig. 6 shows the zooming action (2 examples).

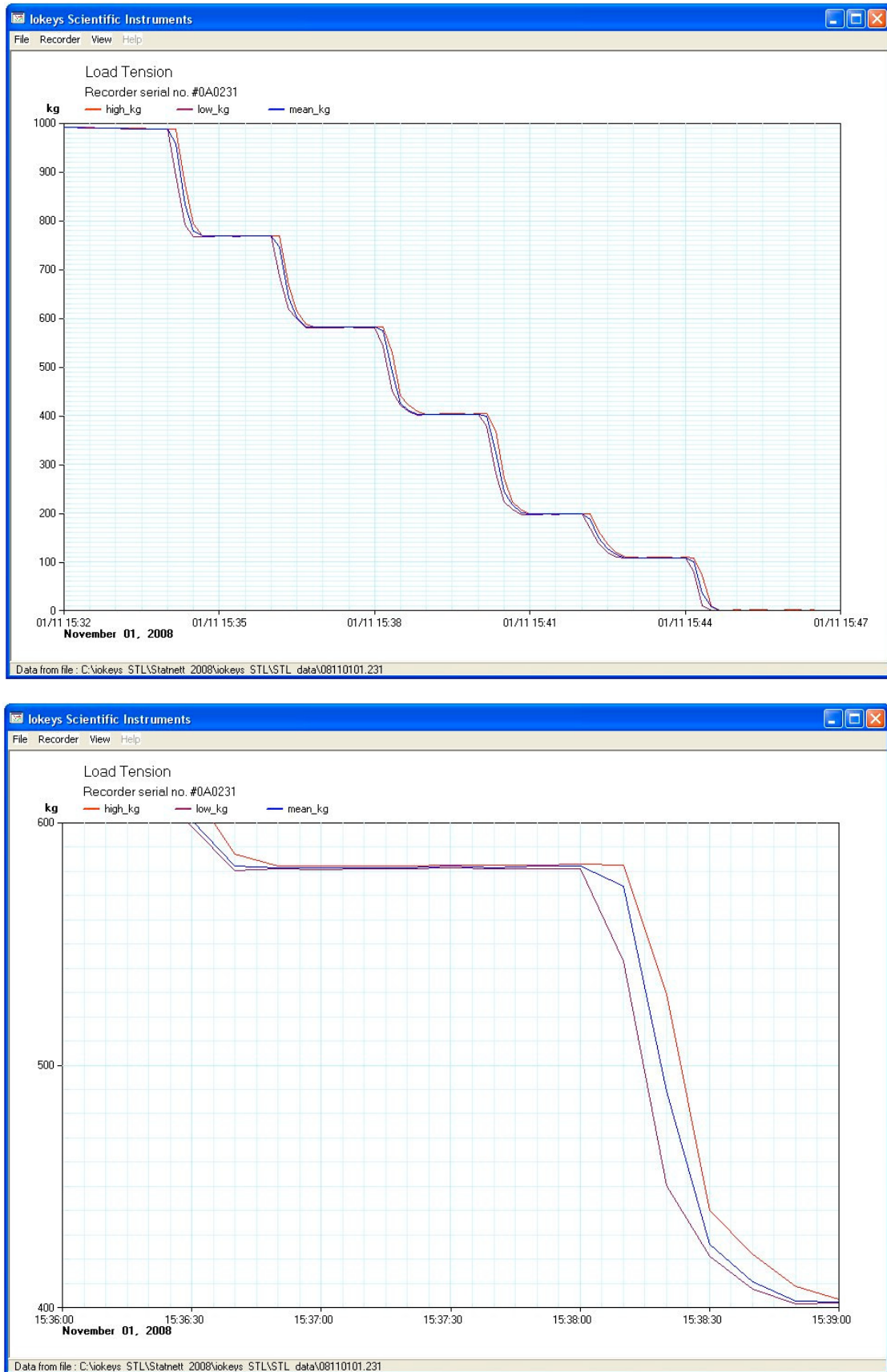


Fig. 6

The View menu

Displaying information from the datafile.

Display Options

A plotmark can be used for identifying the measurement points of the graph. Also the user can change the back color and grid color of the displayed graph.

The user can enter the title of the graph in the title menu.

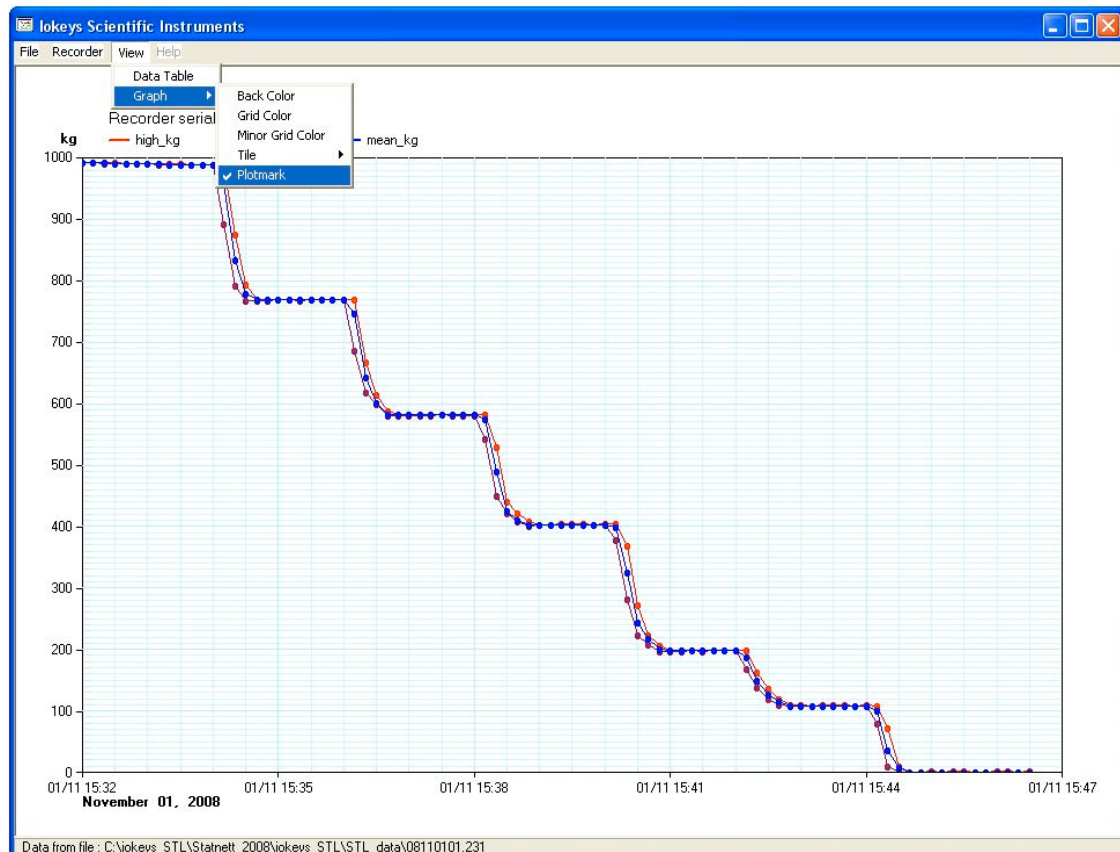
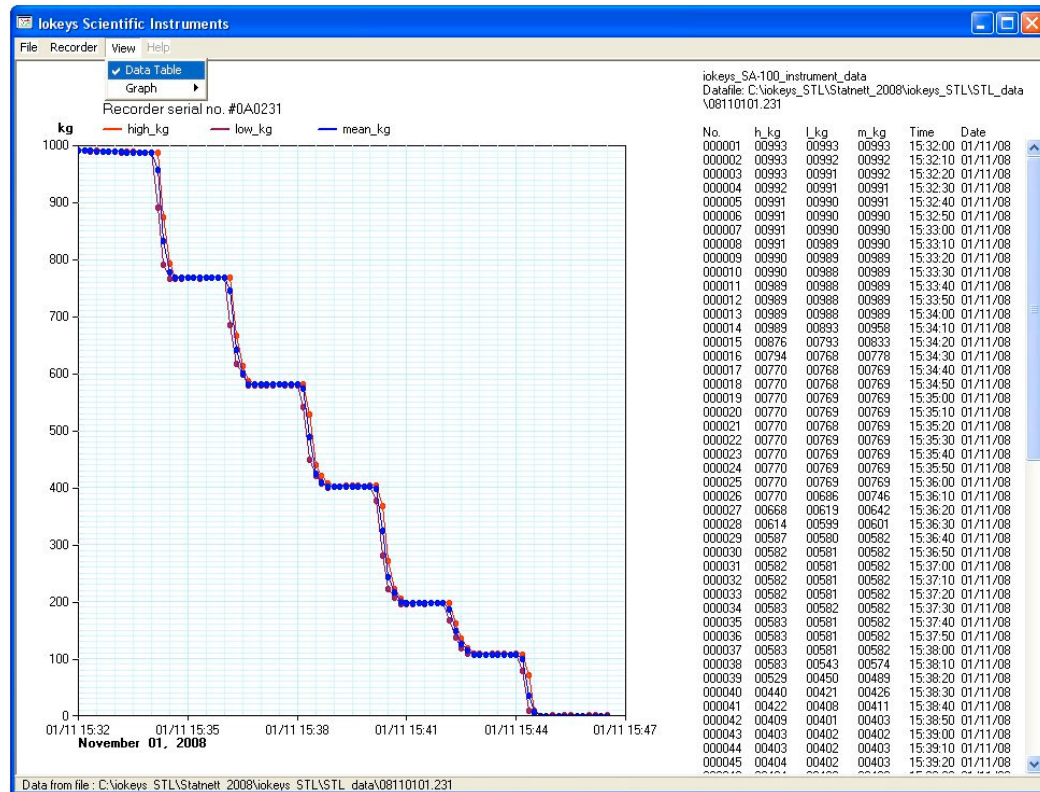


Fig. 7

The graph displays typical calibration measurements of a tension recorder, showing high, mean and low values for 10 minute intervals.

Displaying the Data Table

A data table can be displayed by clicking the “View” menu and “Data Table”. Repeating the process hides the data table.



The data table is stored in a file PdataFile.txt Or as some other name given in the File menu “Save as Printfile”

The information from this file can be imported Into Microsoft Excel or similar programs for further processing.

No.	h_kg	l_kg	m_kg	Time	Date
000001	00968	00968	00968	15:00:00	01/11/08
000002	00969	00967	00968	15:00:10	01/11/08
000003	00969	00967	00968	15:00:20	01/11/08
000004	00968	00967	00967	15:00:30	01/11/08
000005	00967	00967	00967	15:00:40	01/11/08
000006	00967	00967	00967	15:00:50	01/11/08
000007	00968	00966	00967	15:01:00	01/11/08
000008	00967	00874	00934	15:01:10	01/11/08
000009	00865	00812	00832	15:01:20	01/11/08
000010	00812	00788	00794	15:01:30	01/11/08
000011	00789	00788	00789	15:01:40	01/11/08
000012	00789	00788	00789	15:01:50	01/11/08
000013	00789	00788	00789	15:02:00	01/11/08
000014	00789	00788	00789	15:02:10	01/11/08
000015	00789	00789	00789	15:02:20	01/11/08
000016	00789	00788	00789	15:02:30	01/11/08
000017	00789	00789	00789	15:02:40	01/11/08
000018	00789	00788	00789	15:02:50	01/11/08
000019	00789	00788	00789	15:03:00	01/11/08
000020	00789	00712	00765	15:03:10	01/11/08
000021	00699	00635	00668	15:03:20	01/11/08
000022	00633	00592	00603	15:03:30	01/11/08
000023	00593	00592	00592	15:03:40	01/11/08
000024	00593	00593	00593	15:03:50	01/11/08
000025	00594	00592	00593	15:04:00	01/11/08
000026	00594	00593	00593	15:04:10	01/11/08
000027	00593	00593	00593	15:04:20	01/11/08
000028	00594	00592	00593	15:04:30	01/11/08
000029	00593	00593	00593	15:04:40	01/11/08
000030	00594	00593	00593	15:04:50	01/11/08
000031	00594	00593	00593	15:05:00	01/11/08
000032	00593	00515	00563	15:05:10	01/11/08
000033	00504	00422	00460	15:05:20	01/11/08
000034	00419	00404	00412	15:05:30	01/11/08
000035	00405	00404	00404	15:05:40	01/11/08
000036	00405	00404	00405	15:05:50	01/11/08
000037	00405	00405	00405	15:06:00	01/11/08

Fig. 8

The Recorder menu

The recorder menu of the iokeys program enables the user to communicate with an instrument. The computer running the program must have a RS-232 communication port installed. The program enables communication with 4 ports: com1, com2, com3 and com4. See fig. 9

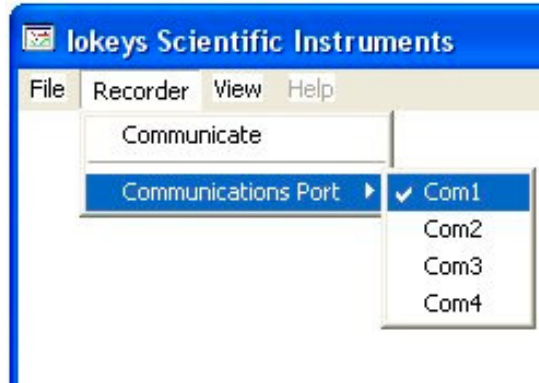


Fig. 9

Connect the instrument to the communications port when the port has been selected and click on "Communicate" with the mouse pointer.



Fig. 10

The following window is displayed, enabling the user to initiate the communication with the instrument.

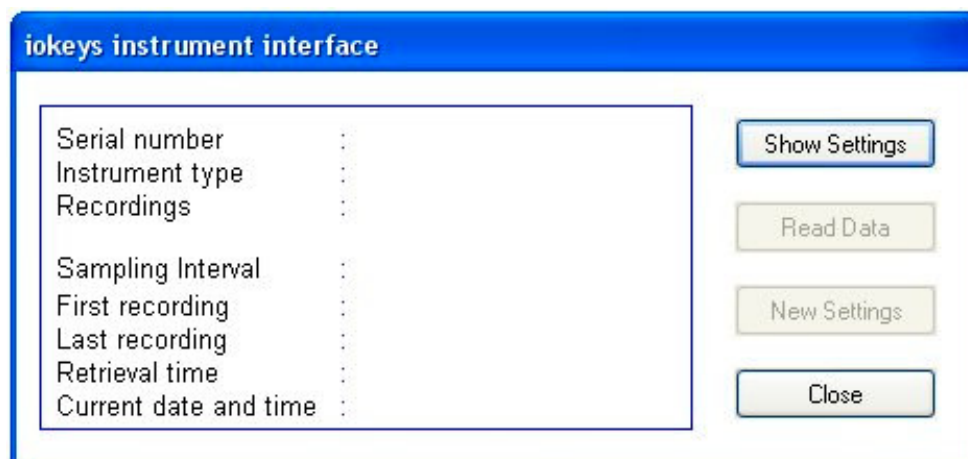


Fig. 11

Show Settings

Clicking on the **Show Settings** button starts the communication, and if connected, the instrument sends the response.

An example is given below in fig. 12:

In this example, the serial number is 0A0142 and the instrument type is THR-020, (which is a temperature and humidity recorder).

The sampling interval is 10 minutes and the first recording was on Aug 22nd 2007 at 13:10. The recorder gathered data for more than a year, as is seen from the "Last recording". (Data downloaded at that time, and stopped the recordings).

The "Current date and time" in the display is from the recorder, but not from the communicating computer.



Fig. 12

Read Data

By clicking on the **Read Data** button, data retrieval is initiated. Before the data transfer to the computer, you would need to confirm or make changes to the location of the new datafile as shown in fig. 13. Then click on the "Save" button.

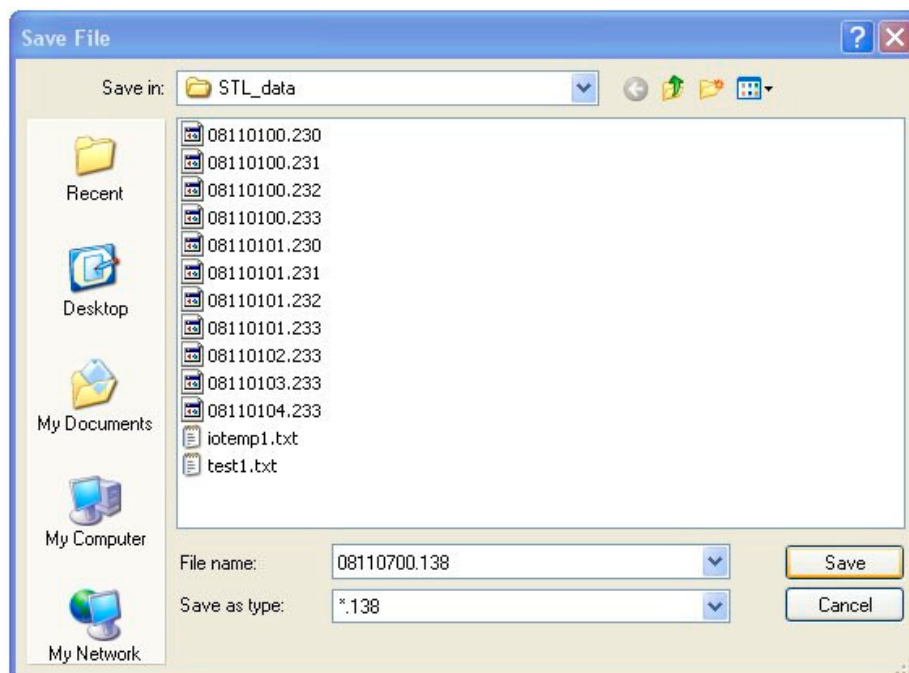


Fig. 13

Data download is now starting as is indicated in the picture below.



Fig. 14

The picture shows the "Reading Data" in progress.

The downloaded file can then be opened as described above.

New Settings

Initiating a new measurement session is enabled by clicking on the "New Settings" button. The sampling interval can be chosen to any value between 5 seconds and 18 hours. The first recording time needs to be atleast 2 minutes in the future. If not, then it will be indicated in red letters. The instruments can store up to one million measurements (see: www.iokeys.com for details for each instrument's specifications).

First click on the "Sampling Interval" at the left in the window, which becomes an active area "button", after you click on the "New Settings" button. This is shown in the picture below. Then choose the sampling time with the arrows at the bottom of the form window.



Fig. 15

The arrows below the display enables the setting of the parameters. Use the mouse pointer to increment or decrement the values as you wish.

The "First recording" active area "button" enables you to change the date and time of the first recording.



Fig. 16

When the sampling interval and the first recording date and times are set, with the small "up" and "down" arrows below the display, then click on the "New Settings" button. The new settings are now transferred to the instrument which needs to be connected to the computer at that time.

The current date and time of the communicating computer is automatically transferred to the recorder when the new settings are loaded into the recorder.

NOTE!

Please check that the date and time of the communicating computer is correct, when the new settings are loaded into the recorder.

For additional information,
please contact by email:

info@iokeys.com

Internet website: www.iokeys.com