

SENSORS & SYSTEMS

Solutions that Work

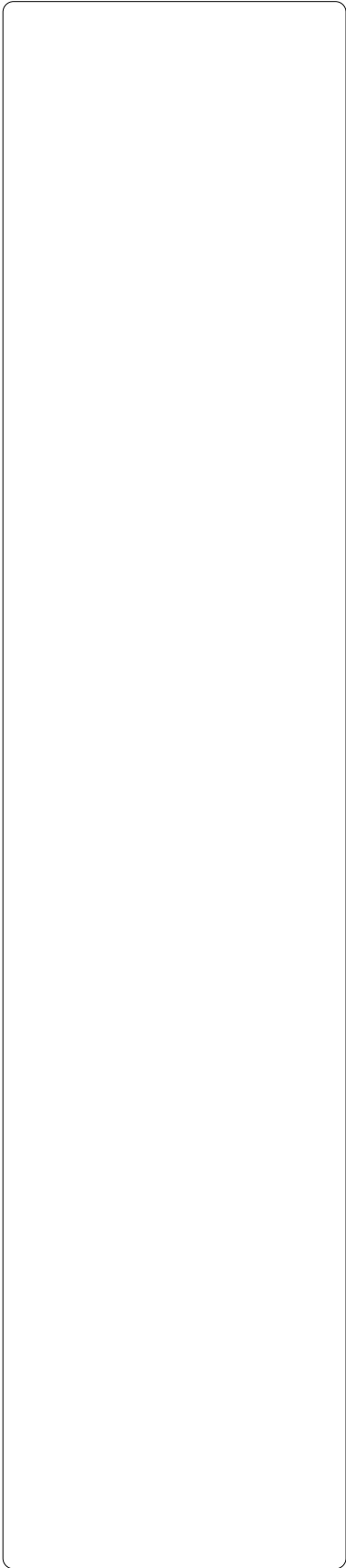


MICRO-EPSILON
SOFTWARE DIVISION

INSTRUMENTATION MICRO-EPSILON

**Software for
Signal Analysis**

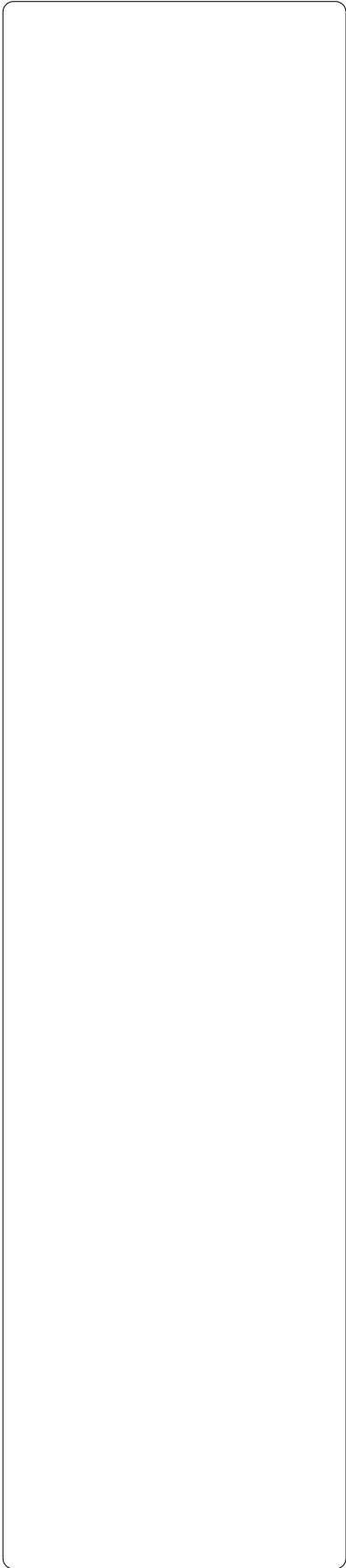
sensor**DAT** 2000 V2.0



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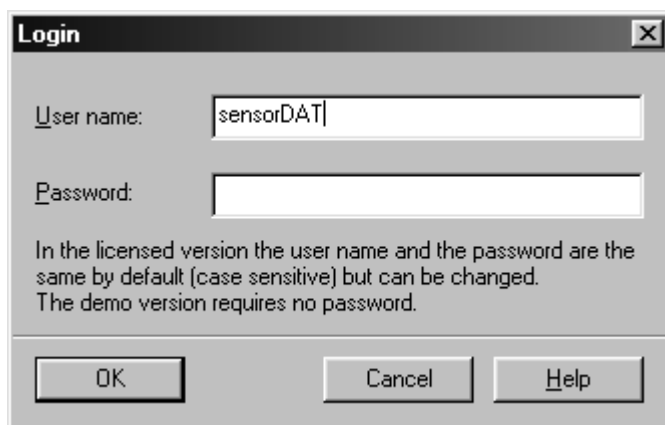
1.0 Introduction

sensorDAT 2000 allows quick data acquisition and flexible evaluation. Data acquisition and evaluation are separated from each other, which is reflected in the different surfaces. Data acquisition is described in chapter 4 and 5. A description of offline data analysis is contained in chapter 6.

2.0 Installation

Start the set-up file on the CD-ROM. Licensing is only possible with inserted dongle and with the licence disk. A double click on the sensorDAT icon will start the application.

3.0 Login



The login dialog appears when a mouse button is pressed.

Fig. 3.1: Login

4.0 Single-Channel Data Acquisition

4.1 Selection of Hardware and Number of Channels

Select the hardware for data acquisition from the **Data acquisition** pull-down menu (for example: IF 2000), then press the **Start** button.

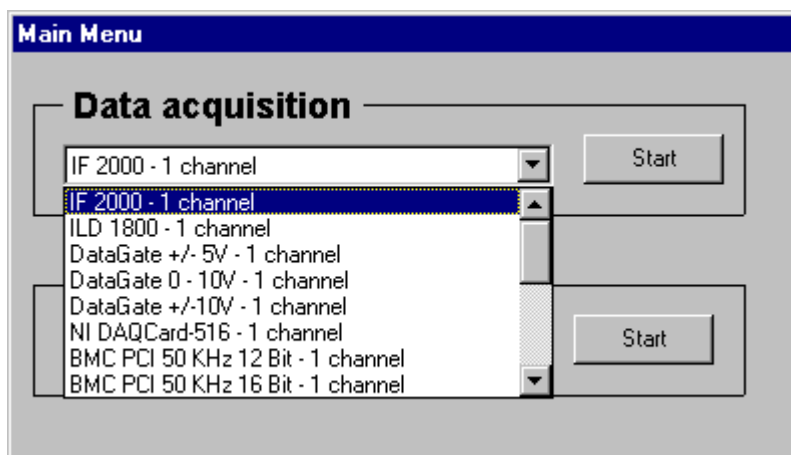


Fig. 4.1: Hardware selection in sensorDAT 2000

4.2 Data Acquisition

Settings or changes of the data acquisition hardware can only be performed in the dialog of the opto module (see fig. 4.2). Open this dialog with a double-click on the opto module. Then change the corresponding settings and close the dialog field with . Please refer to for information on the individual items.

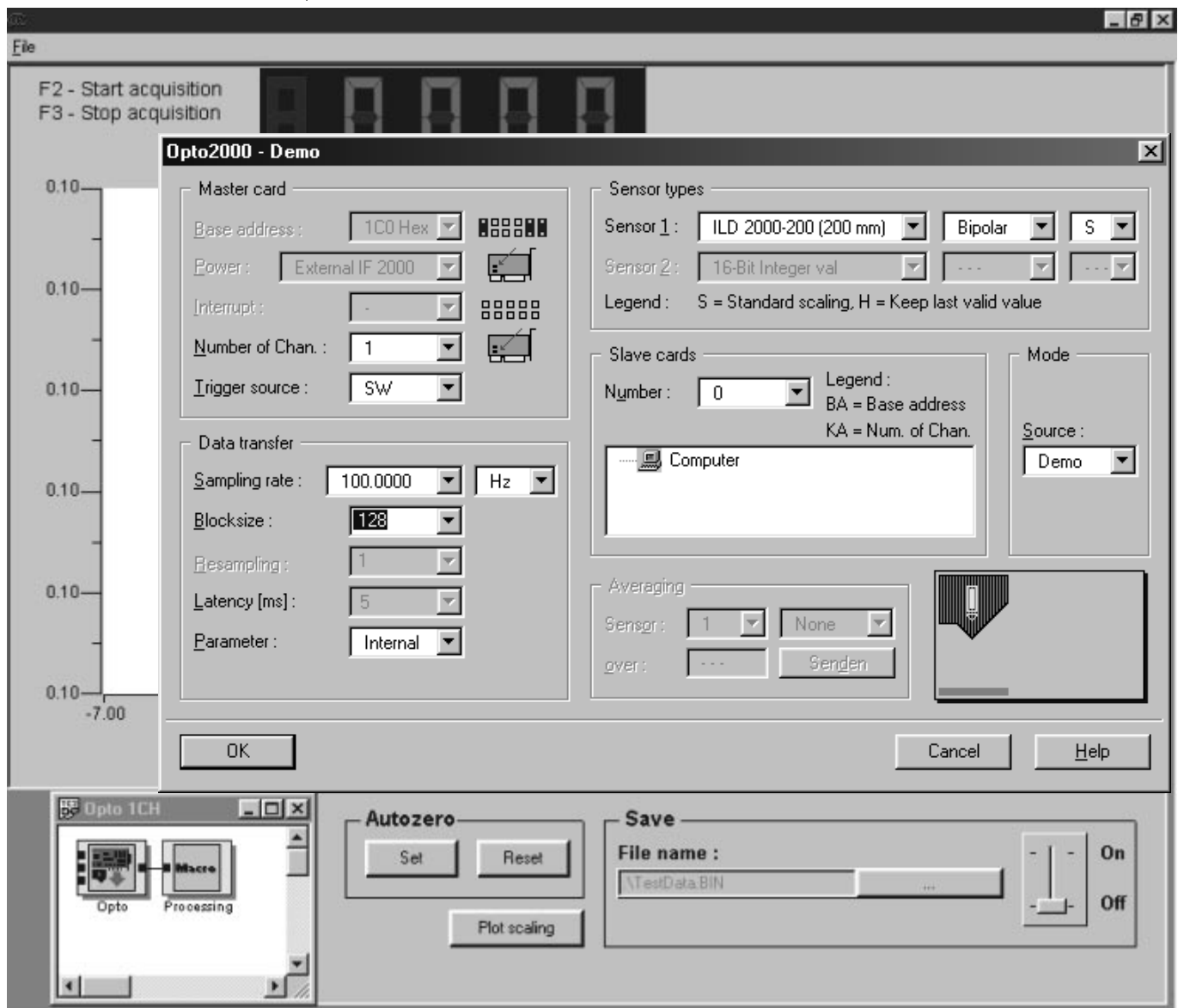


Fig. 4.2: Dialog window - Data acquisition - Hardware

Data are acquired in acquisition mode.

F2 Start acquisition

F3 Stop acquisition

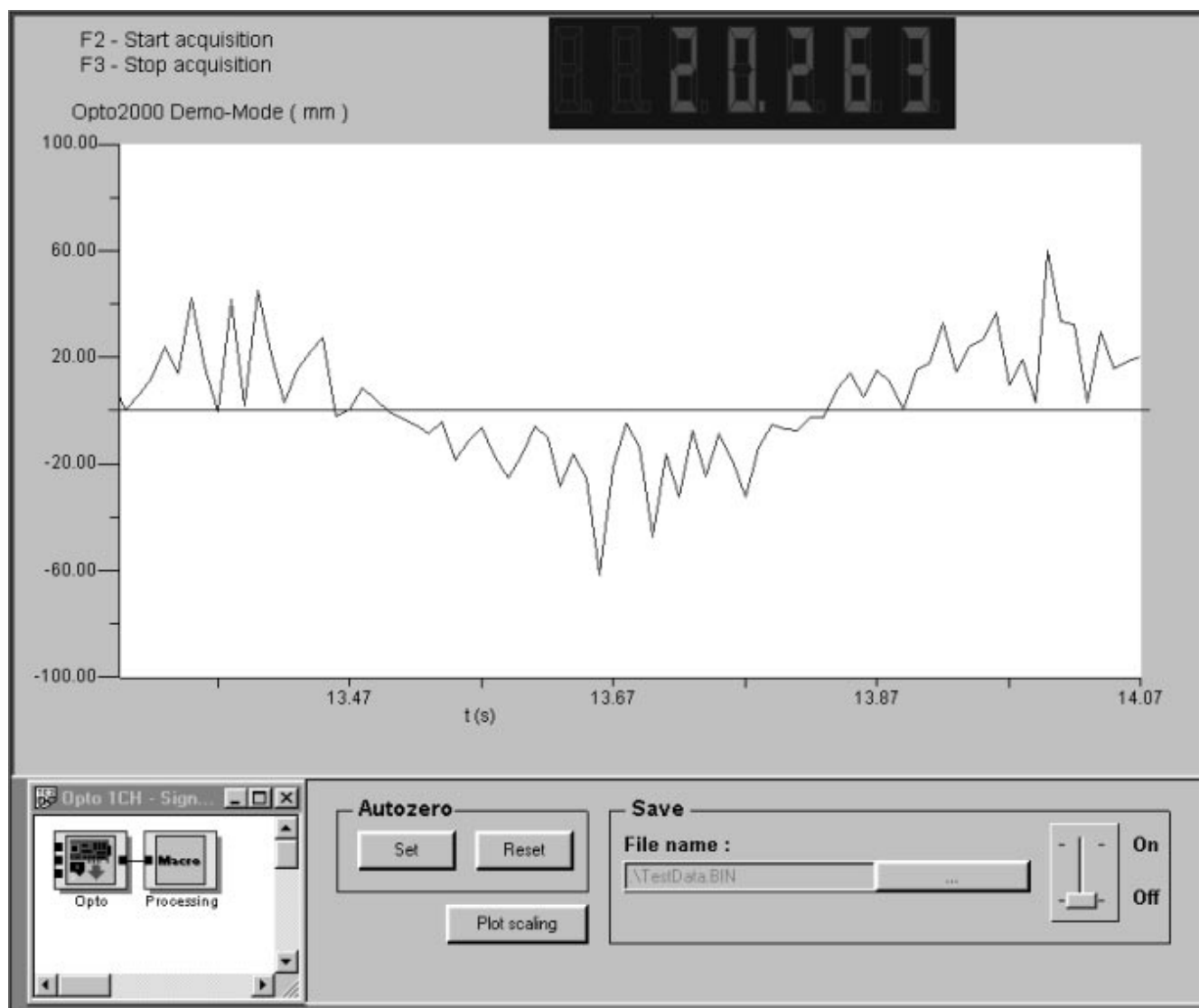


Fig. 4.3: Dialog window - Data acquisition

- Autozero** Automatic zero setting
- Set Sets the current signal value to zero
 - Reset Deactivates the autozero function

- Plot Scaling** Determines the range to be displayed
- Auto Automatically selects upper and lower limit of the signal to be displayed
 - x-axis Definition of the time interval to be displayed
 - y-axis Definition of the upper and lower limit of the signal to be displayed

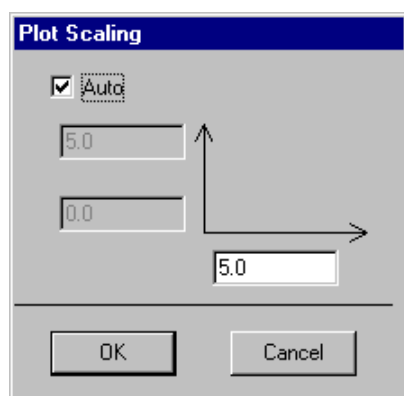


Fig. 4.4: Plot scaling menu



IMPORTANT!

Plot scaling and **Autozero** are only possible while acquisition is running.



WARNING!

Saved data are overwritten when **ON** is reactivated. Please observe the file name to avoid loss of data.

Save Starts data recording
• File name ON = Start saving
OFF = Stop saving

File
• Exit = Exits the program
• Main menu = back to the main menu

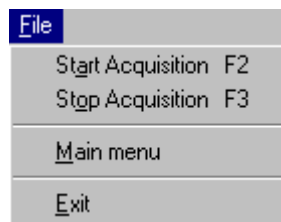


Fig. 4.5: File menu

5.0 Dual-Channel Data Acquisition

5.1 Selection of Hardware and Number of Channels

Select the hardware for data acquisition from the **Data acquisition** pull-down menu (for example: IF 2000 - 2 channel), then press the **Start** button.

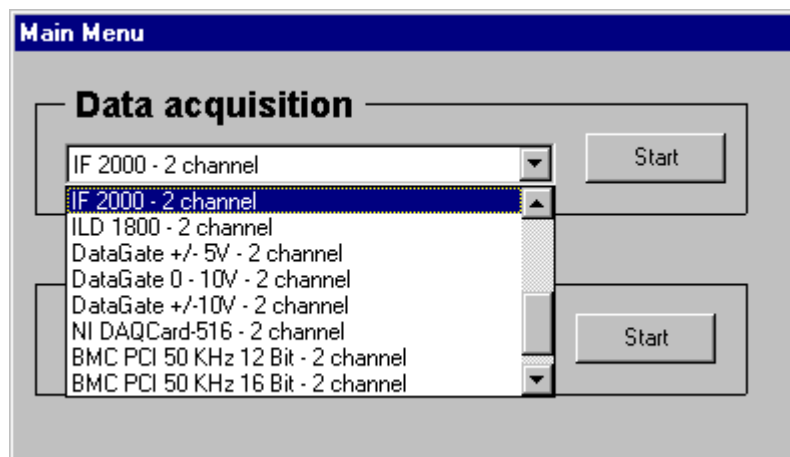


Fig. 5.1: Hardware selection in sensorDAT 2000

5.2 Data Acquisition

Settings or changes of the data acquisition hardware can only be performed in the dialog of the opto module (see fig. 5.2). Open this dialog and change the corresponding settings. Then close the dialog field with **OK**. Please refer to the comprehensive **Help** system for information on the individual items.

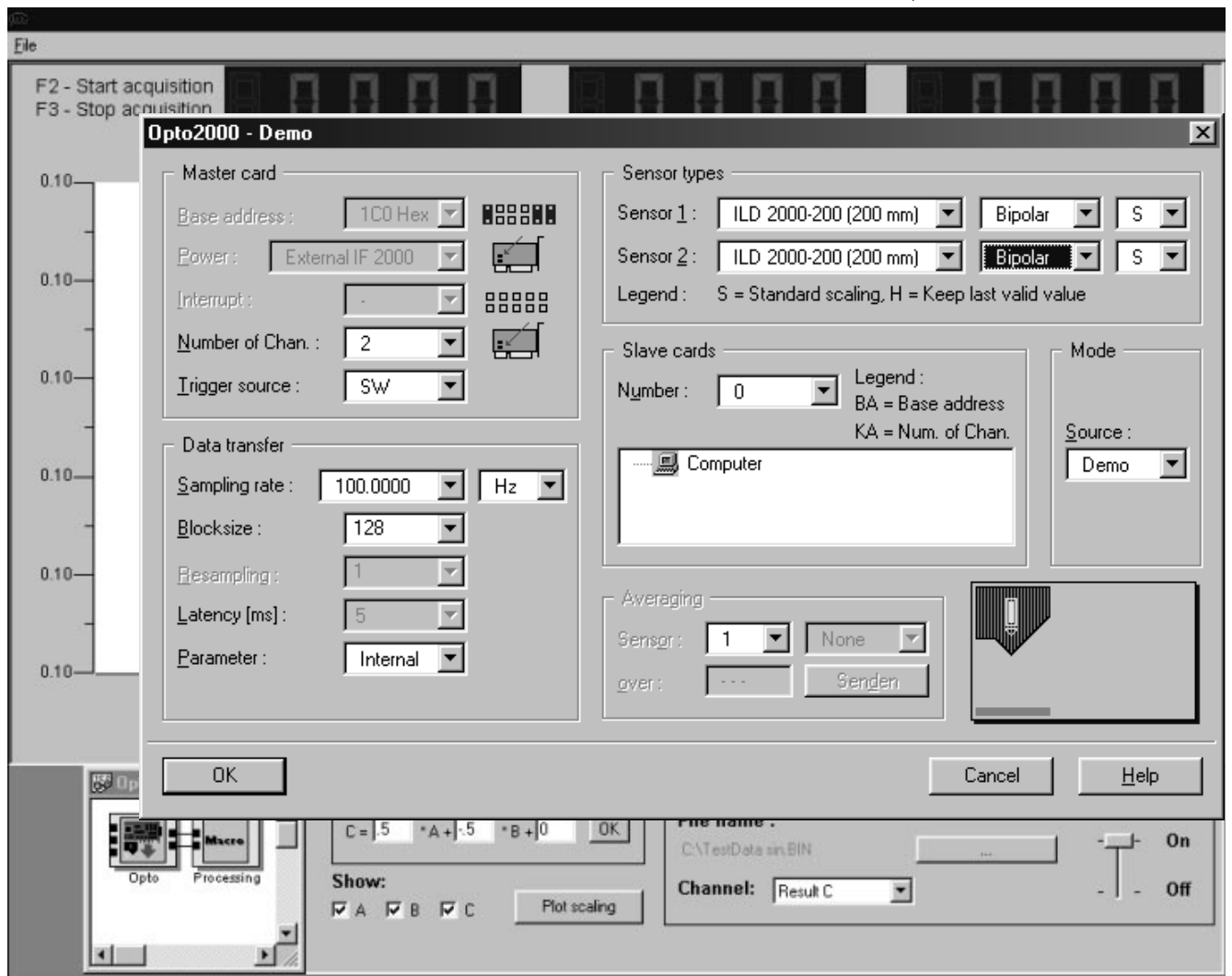


Fig. 5.2: Dialog window - Data acquisition - Hardware

Data are acquired in acquisition mode.

F2 Start acquisition

F3 Stop acquisition



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Fig. 5.3: Dialog window - Data acquisition



IMPORTANT!

Save always records only one channel.

C calculation Coefficient for channel linking

Show Selects the channels to be displayed

Plot Scaling Determines the range to be displayed

- Auto Automatically selects upper and lower limit of the signal to be displayed
- x-axis Definition of the time interval to be displayed
- y-axis Definition of the upper and lower limit of the signal to be displayed

Save Starts data recording

- File name ON = Start saving
OFF = Stop saving

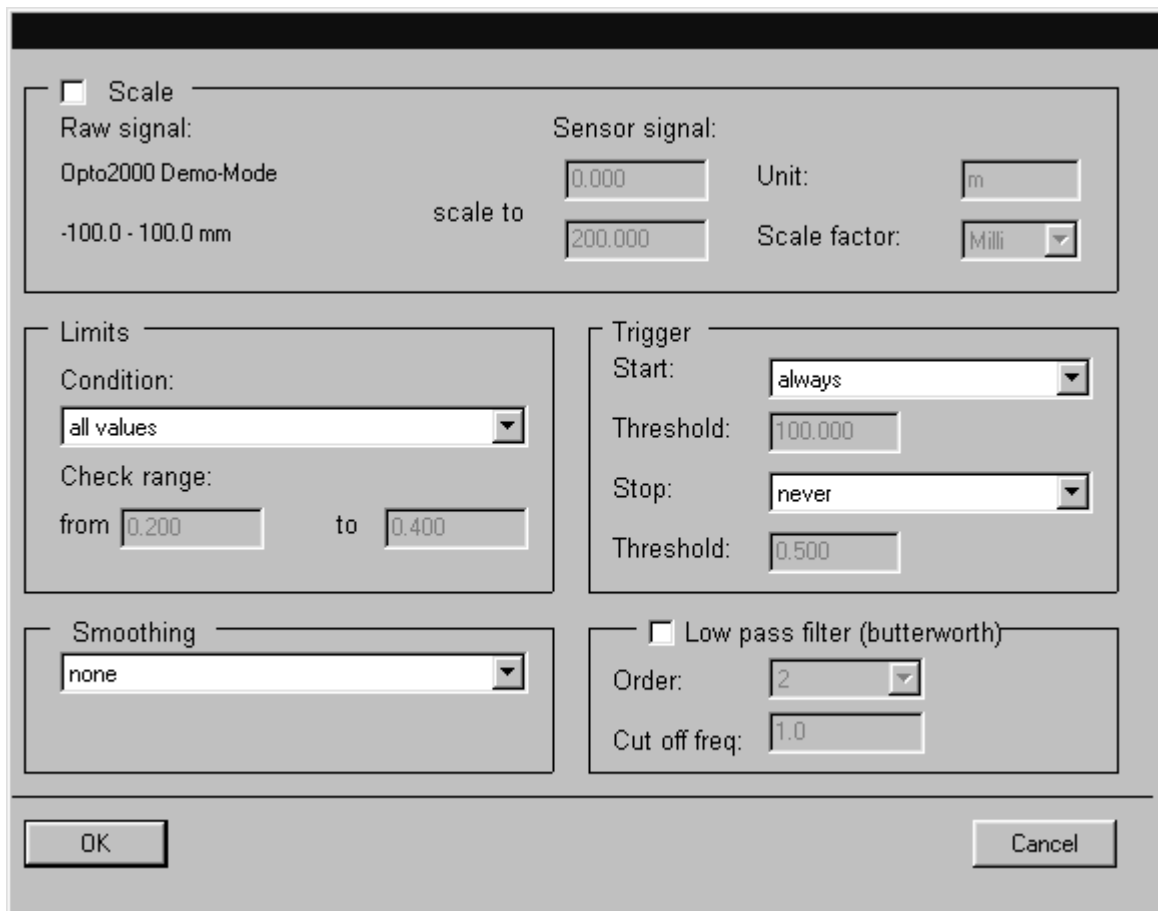
File

- Exit = Exits the program
- Main menu = back to the main menu

6.0 Data Analysis - Oscilloscope

Open the **Main menu** (File menu) and select **Offline analysis**.

In the **Data analysis > Parameter** menu (see fig. 6.1) you can set parameters for signal conditioning e.g., scaling, limits, filter, and smoothing. Confirm your settings with .



The dialog box is titled "Parameter" and contains several sections for configuring signal processing:

- Scale**: A checkbox is checked. The "Raw signal" is "Opto2000 Demo-Mode" with a range of "-100.0 - 100.0 mm". The "Sensor signal" is set to "0.000" with a "scale to" of "200.000". The "Unit" is "m" and the "Scale factor" is "Milli".
- Limits**: The "Condition" is set to "all values". The "Check range" is from "0.200" to "0.400".
- Trigger**: The "Start" is set to "always", the "Threshold" is "100.000", the "Stop" is set to "never", and the "Threshold" is "0.500".
- Smoothing**: The setting is "none".
- Low pass filter (butterworth)**: A checkbox is unchecked. The "Order" is "2" and the "Cut off freq" is "1.0".

At the bottom, there are "OK" and "Cancel" buttons.

Fig. 6.1: Parameter menu in data analysis

6.1 Selection of the Data File

You can start the evaluation with **Start analysis** from the **Data analysis** menu. sensorDAT then prompts you to enter the data file (see fig. 6.2).

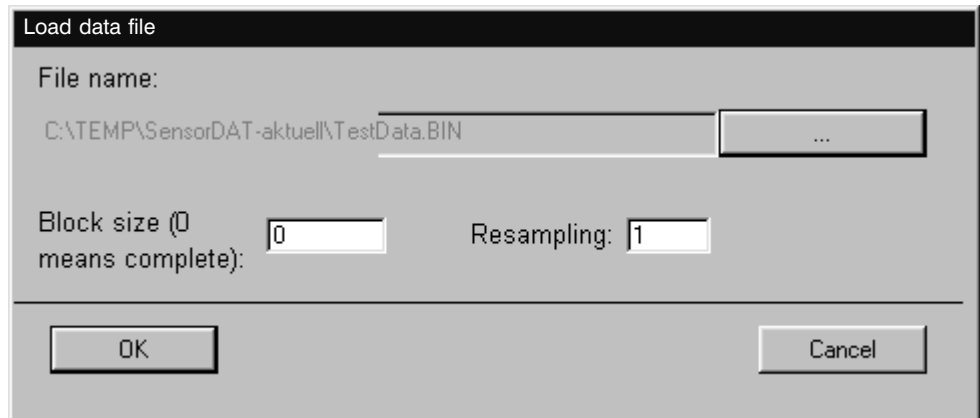


Fig. 6.2: Load data file menu

Parameters for file selection:

- **File Name** File selection
- **Block size** Number of values to be gathered in one block for faster processing. The maximum number of values is 32768.
- **Resampling** Factor for data reduction (1=no reduction).

6.2 Y/t Plot

When sensorDAT has loaded the data file, the data are displayed in a plot chart (see fig. 6.3).

Operation of this chart:

- **Slides** For positioning of the cursors e.g., for zooming.
- **Tie cursors** Couples the movement of the t-cursors with the respective Y-cursors.
- **Zoom** For zooming the display in / out
- **Reset** Displays the complete signal.
- **Freeze/Cont** Data are already displayed while they are read in. Reading in is continued in the background.
- **Save signal** Saves data in ASCII format (can also be used in other programs e.g., Excel).

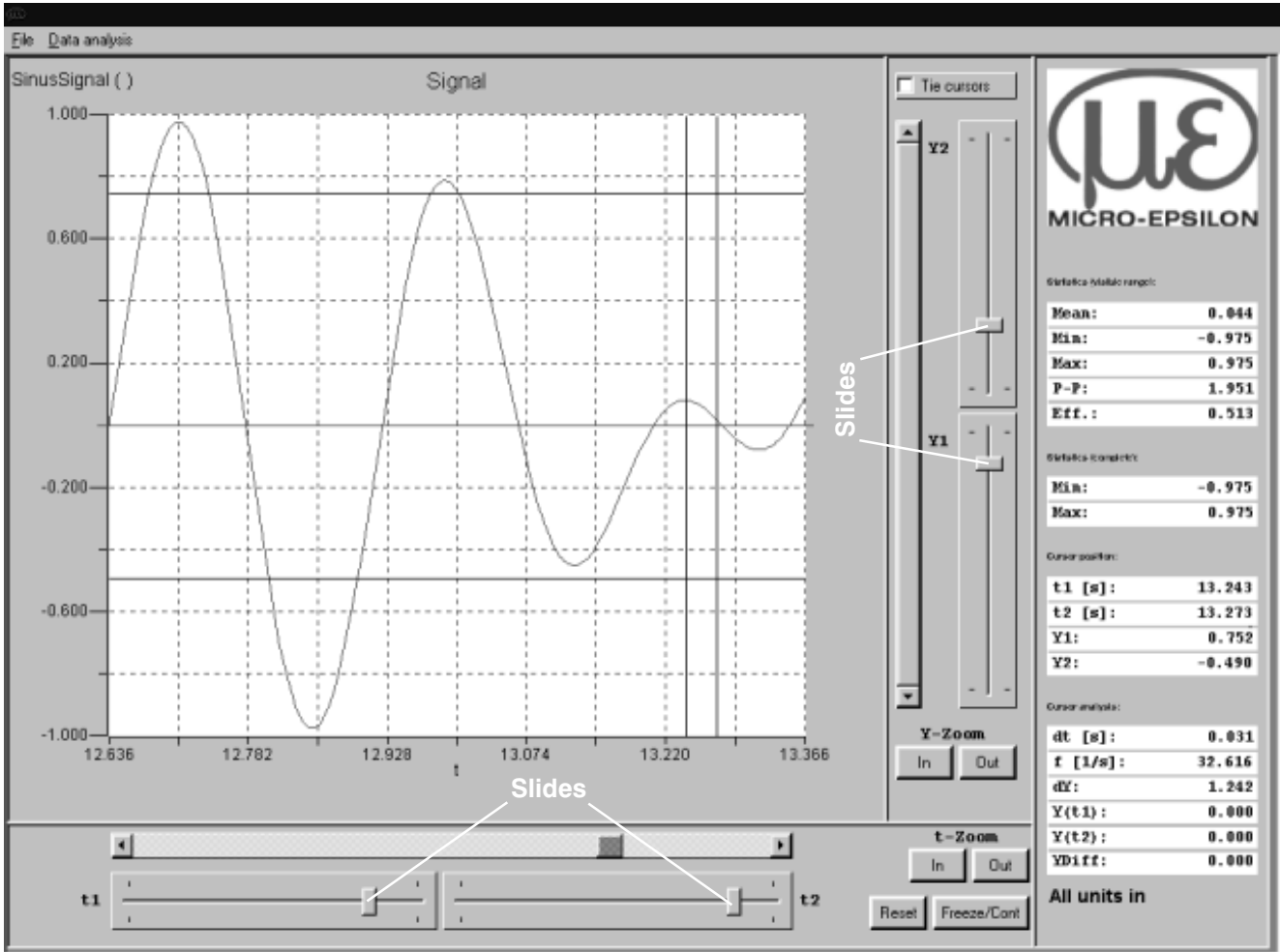


Fig. 6.3: Visualisation of a channel in sensorDAT

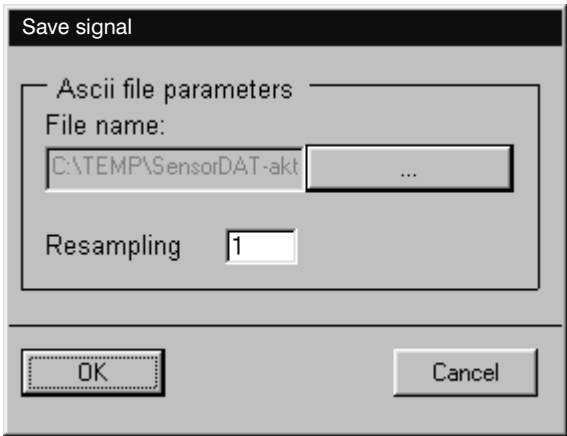


Fig. 6.4: Saving of a channel in ASCII format

