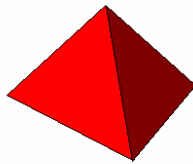


# WinAcq

## USER MANUAL



Absolute Aliens Oy

Revision 1.3

19.03.2004

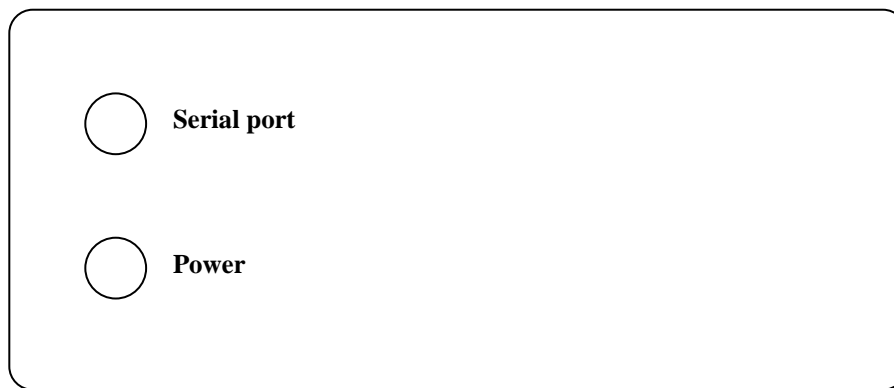
# WinAcq User Manual

## 1. Components and connectors

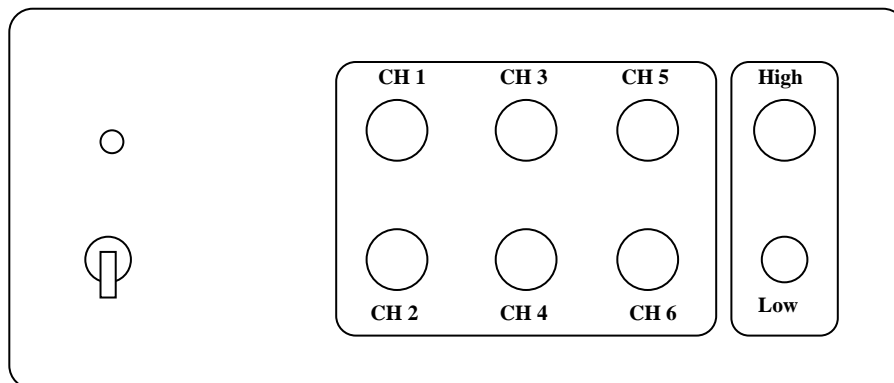
System consists of the following parts:

1. WinAcq data-acquisition device
2. Power supply unit
3. Power cord for the power supply unit
4. Connecting cable for the serial port
5. USB adapter cable (optional)

In the delivery there can be customized connecting cables for external devices, and mouthpiece and tubing used for Valsalva test and handgrip balloons and tubing used for handgrip test.



**Back panel**



**Front panel**

In the back panel of the device there are two connectors: the upper one for the serial port and the lower one for the power supply. The serial port cable has the round connector of five pins and the power supply cable the round connector of two pins. Before connecting any cables to the device check that you are using the correct cable. In the other end of the serial port cable there is the D-type connector of 9 pins. It is possible that your computer has 25-pin serial port connector, then you must use 9 pin – 25 pin adapter. **The microcomputer and its accessories (monitor, printer etc.) which are in the patient examination room should be connected to the main line through the approved medical isolation transformer.** WinAcq-device has the medical approved power supply unit and therefore it is not needed to use any auxiliary isolation transformer when connecting the device in the main line.

If you are using the USB adapter cable, the one end of this cable is connected to the USB port of the computer and the other end to the serial port cable (9-pin D-type connector). The other end of the serial port cable is connected to the WinAcq device as described above.

In the front panel of the device there are the power switch, signal lamp, 6 general-purpose analog inputs and 2 pressure inlets.

The general-purpose analog inputs (marked with **CH 1**, .., **CH 6**) can be used to connect external devices like ECG amplifier, blood pressure monitor, spirometer and other similar measurement devices. The technical specifications of the 7-pin input connector can be found on the WinAcq Service Manual. We recommend that the connecting cables are provided by the supplier of the WinAcq device since incorrectly connected cables can permanently damage the device. **The maximal input voltage of the analog inputs is  $\pm 18$  volts and this voltage must not be exceeded even momentarily.**

**The user of WinAcq should be take care that patient equipment or devices of other manufacturers connected to the WinAcq device, like ECG amplifiers, including all electrical parts and components fulfill all currently valid local and international regulations and instructions of patient safety and electrical safety.**

The pressure channels are designed for the handgrip test balloons (the upper inlet of 4 mm, marked with **High**) and Valsalva test mouthpiece (the lower inlet of 3 mm, marked with **Low**). If these channels are used for other purposes it should be checked that the maximal pressure of 3 bars is not be exceeded

When the power supply unit is connected to the main line, the green light is seen. It is not necessary to disconnect the power supply when the device is not in use. When the power has been switched on to the WinAcq device by its own power switch, its signal lamp is green. In the measurement mode this lamp is yellow.

## 2. Testing

Before actual recording it is recommended to check that WinAcq device works properly. The most important task is to set the serial port number. Normally the number of the serial port (COM1, COM2, COM3 or COM4) of the computer is marked to the connector, or it can be found on the user manual of the computer. If the correct number is not known, it can be found simply by trials. In most cases the port is either COM1 or COM2.

1. Connect the WinAcq device according to the instructions; if the device is started properly, the signal lamp is green.
2. Start WinCPRS (check that the license module has been connected to the printer or USB port of the computer).
3. Select the item *Measure* from the main menu.
4. On the submenu select the item *WinAcq-F*, then the dialog for various settings is opened.
5. In *Parameters* section of the dialog there is the parameter *Serial port*. From the drop-down list select that serial port number into which the device has been connected.
6. Try to communicate with device by pressing the *Connect* button.
7. If the connection succeeded, the status text **Connected** is shown on the dialog.
8. If the connection failed, you get an error message that the connection couldn't be established. Try another serial port number.
9. If you still have problems check all cables and connectors both in the WinAcq device and in the computer.
10. Finally press the *Disconnect* button and close the dialog.

## 3. The use of WinAcq with WinCPRS

The use of WinAcq with WinCPRS has been described in details in the Help pages of WinCPRS, see *Data acquisition*. If the signal recording is done manually without any automatic measurement protocol, first select item *Measure* from the main menu, and from the submenu select the item *WinAcq-F*. This sets automatically the pressure channels and their parameters. The user should set the total number of the channels used in recording. For each channel, except for pressure channels, the user should select the proper signal type. It is also possible to set various parameters for each channel, like scaling of the signal, noise filters etc. When all settings have been done, they can be saved for future use by opening the *Options* dialog from the main menu, selecting the *Setup* tabsheet, selecting the desired initialization file from the drop-down list and pressing the *Write* button.

To start signal recording first establish data communication to the WinAcq device by pressing the *Connect* button. The signals are monitored when the *Monitor* button is pressed, and then green color of signal lamp is turned to yellow as a sign that data transfer is running. Signals can be saved to memory by pressing the *Save* button. Both monitoring and saving phase can be terminated by pressing the *Stop* button. After data

recording the data communication link must be disconnected by pressing the *Disconnect* button.

#### **4. The use of Valsalva mouthpiece**

The Valsalva mouthpiece is connected to the **Low** pressure channel of WinAcq device. The mouthpiece has been designed to use with disposable card tubes. Suitable tubes are Vitalograph or compatible whose outer diameter is 30 mm. The plastic mouthpiece can be washed by mild soap solution and disinfected with normal alcohol based disinfectant. The mouthpiece is not allowed to boil or warm up. The tubing can be washed using similar methods. **When the mouthpiece or the tubing has been washed they must be dried thoroughly before they are connected to WinAcq device. Water and moisture can damage the pressure sensor permanently.**

#### **5. The use of handgrip balloons**

The handgrip balloons are connected to the **High** pressure channel of WinAcq device. The handgrip balloons and the tubing can be washed by mild soap solution. **When the balloons or the tubing has been washed they must be dried thoroughly before they are connected to WinAcq device. Water and moisture can damage the pressure sensor permanently.**

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