

WARNING**INSTRUCTIONS FOR SAFETY AND USE**

This equipment must be used only by qualified staff. Users must be warned about the danger.

Please read this manual carefully before using the appliance.

S.Q.Lab will not be liable to any defect, failure or damage caused by improper use or improper or inadequate maintenance or care.

S.Q.Lab will not be liable for any indirect, special, incidental or consequential damages irrespective of whether SQLab has advance notice of the possibility of such damages

EVA workstation has been developed in collaboration with the CNRS Laboratory « Speech et Language » from the University of Provence in Aix-en-Provence (Bernard Teston).

Licence CNRS N° L98002
Laboratoire « Parole et Langage »
Université d'Aix-Marseille I
29, Avenue Robert Schuman
13 621 Aix-en-Provence, France

WARRANTY

SQLab warrants that this product will be free from defects in materials and workmanship for a period of one (1) year from the date of shipment. If any such product proves defective during this warranty period, SQLab, at its option, either will repair the defective product without charge for parts and labour, or will provide a replacement in exchange for the defective product.

In order to obtain service under this warranty, Customer must notify SQLab of the defect before the expiration of the warranty period and make suitable arrangements for the performance of service. Customer shall be responsible for packaging and shipping the defective product to the service centre designed by SQLab., with shipping charges prepaid. SQLab shall pay for the return of the product to Customer if the shipment is to a location within the country in which the SQLab service centre is located. Customer shall be responsible for paying all shipping charges, duties, taxes, and any other charges for products returned to any other locations.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance or care. SQLab shall not be obligated to furnish service under this warranty

- to repair damage resulting from attempts by personnel other than SQLab representatives to install, repair or service the product
- to repair damage resulting from improper use or connection to incompatible equipment
- to service a product that has been modified

S.Q.Lab.

BP 40 282
13 798 Aix-en-Provence Cedex 3, France

Internet : www.sqlab.fr

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Suggestions for safety

Learn general instructions for safety to avoid injury and risk of equipment deterioration. To avoid potential danger, use the equipment only as it should be used.

Installation, maintenance and repair must be done only by qualified staff.

Cautions against injury and fire risk

Use only an appropriate Mains connection cable. Use only the specified cable with this equipment and certified for the country.

Earth the equipment. This equipment has an electrical plug with 2 wires + earth, with regards to the medical standards. It is earthed through the connection cable. To avoid electrostatic discharge, the ground conductor wire must be earthed. Before use, check this connection.

Do not use the equipment without its covers.

Connect and disconnect the equipment correctly. Switch off the equipment before connecting or disconnecting the connection between the interface and the mouthpiece, the interface and the computer...

Use only correct fuses. (fuse type and value).

Place the unit where it will be well ventilated. Do not place the equipment in a closed compartment.

Do not use the equipment in case of possible failure. If you think that the equipment has a problem, ask qualified staff to check.

Do not use the equipment in a humid environment.

Do not use the equipment in an explosive environment.

Take care of surfaces which should be clean and dry.

Connection with external equipment. Before connecting an external equipment (E.G.G., E.M.G. ...), contact SQLab company to check the compatibility.

Equipment specifications and use condition

Condition of use

Read technical specification. S.Q.Lab company will not be liable to any defect, failure or damage caused by improper use or improper or inadequate maintenance or care.

Power supply

Mains	Tension	230/240 Vac nom.
	Frequency	47 - 400 Hz
Consumption		40 W
External Fuse	5x20 mm, 250V, T	0.5 A (↔ 500mA)
Internal Fuses	5x20 mm, 250V, T	3.15 A

Input Signals

« Aux. » terminal	+/-10 V
« Line in » terminal	+/-10 V
« EGG » terminal	+/- 10V
« Mouthpiece » terminal	+/-10 V

Output Signal

« A » terminal	+/- 10V
« D » terminal	0 / + 5V
« Ext. » terminal	+/-10 V
« Mouthpiece » terminal	+/-15 V
« Line Out » terminal	+/- 10V
« Loudspeaker » terminal	+/- 25V (30W, 8Ω)
« Headphone » terminal	+/- 25V
« Aux. » terminal	+/- 15V until 50mA

Calibration

Calibration should be done every year.

Environment

Temperature	Functioning	+10°C / +40°C
	Stopped	-20°C / +60 °C
Cooling		Air-cooled
Humidity		30 / 75 %
Pressure		700 / 1060 hPa

Mechanical Specifications

« Interface » Dimensions	H	115 mm
	W	470 mm
	D	400 mm (440 with connectors plugged)
« Interface » weight		11 kg
« mouthpiece » Dimensions	H	290 mm (500 with sensors...)
	W	70 mm (130 with tubes...)
	D	70 mm (150 with sensors...)
« mouthpiece » weight		1 kg

Materials


mask	silicone Rhodorsil RTV521: <ul style="list-style-type: none"> polydimethylsiloxanes stable at normal temperature decomposition temperature > 200 °C local effect : can slightly irritates eyes materials to avoid : strong oxidant
« mouthpiece »	Acetal copolymer (POM) C2521 (Hostaform) : <ul style="list-style-type: none"> water absorption : 0.2% (23°C, 50 %humidity) maximal temperature without damage : 140°C (few hours), 100°C (years) dielectric rigidity : 35 kV/mm resistant against chemical or organic agents very low gas permeability HB class for fire test UL94 « alimentary » quality

Conformity of the equipment

EVA2 is in conformity for class 1 type BF equipment in respect of medical electrical equipment with regards to the standard EN 60 601-1.

Certifications and conformity

Conformity

 compliant

Conformity for class 1 type BF equipment in respect of safety of medical electrical equipment with regards to the following standards :

- EN 60 601 - 1 (1991)

Conformity in respect of Electromagnetic Compatibility of medical electrical equipment with regards to the following standards :

- EN 60 601 1-2 (1993) including :
 - * EN 55 011 : emission requirements of ISM equipment
 - * EN 61 000 4-5 : basic immunity standard for surge
 - * CEI 801-2 : ESD immunity requirements for IPMC equipment
 - * CEI 801-3 : Immunity to radio frequency Em-fields for ISM equipment
 - * CEI 801-4 : Burst immunity requirements for IPMC equipment

Conventions

Symbols on the equipment

The following symbols may appear on the equipment:



earth protection



electrical ground

Typographic conventions

Some symbols may appear in margin in this manual



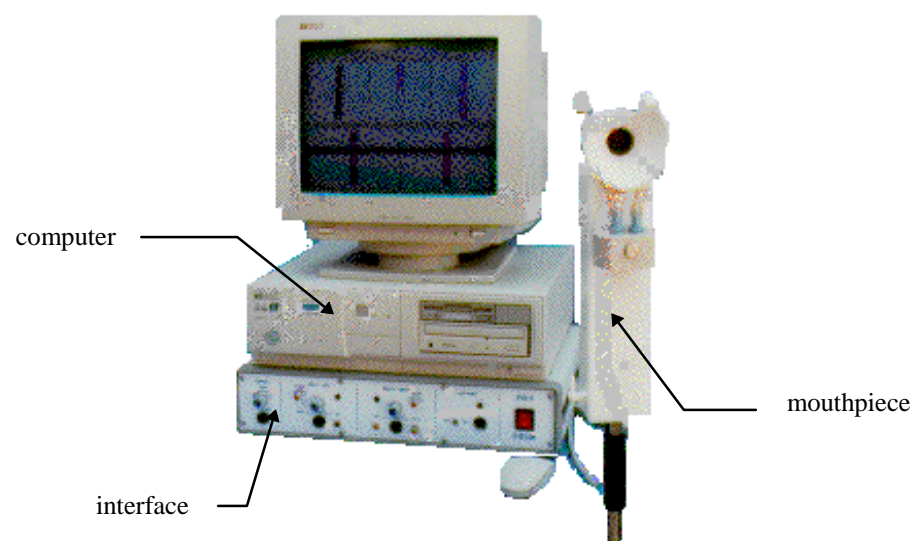
indicates conditions or processes which can damage the equipment or get you into a lot of trouble.



indicates conditions or processes that you must avoid for a correct use.

Installation

EVA™2 is made of several sensors, an electronic interface, an acquisition board and a computer. The « mouthpiece » is the part which contains aerodynamic sensors.



general view of the station EVA 2

To install the equipment, this is the way to proceed: (each step will be detailed)

Inventory

Check the inventory for a standard configuration:

- EVA2 interface
- calibrated microphone with cable
- tripod for microphone
- loudspeaker
- « cap » for external terminal
- acquisition board or module
- mains connection cable
- connection cable between the interface and the acquisition module
- dongle
- software
- manuals

Additional equipment for aerodynamic version :

- « mouthpiece »
- tripod for « mouthpiece »
- airflow mask set

How to place the unit

Choose an appropriate room to install the equipment. Be sure to check the power source and the environment carefully).



The room must not be noisy. For aerodynamic recording, take care of draught.

Do not expose the equipment to direct sunlight for a long time.



To avoid damages, do not subject the interface and the interior of the mouthpiece to vaporisation, liquids, solvents or excessive heat.

Place the interface on a plane surface near the computer. Screw the mouthpiece to the tripod. Check the fixing and the stability. Do not tilt too much the tripod.



Take care of « mouthpiece ». Transducers could be damage by an accidental fall.

Use the other tripod for the microphone. Screw the different parts. To avoid an accidental fall of the microphone, coil up the cable around the tripod. Take care of the stability.



Handle the microphone cautiously. It could be damage by an accidental fall.

Install drivers

Install software as an ADMINISTRATOR (Windows XP, Vista)
DATA TRANSLATION software is included in EVA CDROM or in OMNI CD CDROM.



**THE SOFTWARE MUST BE INSTALLED BEFORE CONNECTING
HARDWARE TO THE COMPUTER**

Read the Getting Started Manual of DATA TRANSLATION.

Install hardware

**Data acquisition board should be installed by qualified staff.
Read the getting started manual relative to the acquisition board**

USB version (external module)

Plug USB cable from the external box to the PC.
Follow instructions on screen.

PCI Version (board inserted inside PC)

To set up the computer, perform the following steps:

- Turn off the computer.
- Unplug the computer and all peripherals.
- Remove the cover from you computer.
- Set up an expansion slot by selecting a 32-bit or 64-bit PCI expansion slot.
- Hold the board by its edges and do not touch any of the components on the board. Position the board so that the cable connectors are facing the rear of the computer.



To prevent electrostatic damage that can occur when handling electronic equipment, use a ground strap or similar device when performing this installation procedure.

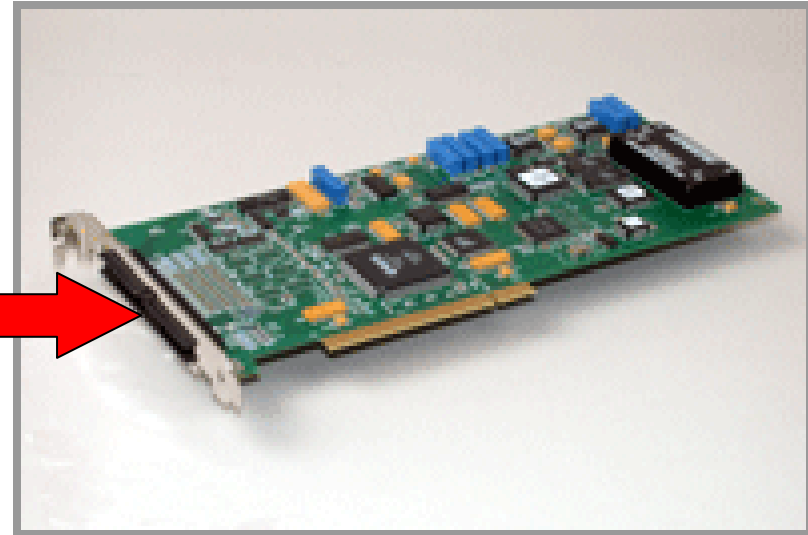
- Secure the board in place at the rear panel of the system unit using the screw removed from the slot cover.
- Do not force the board into place. Moving the board from side to side during installation may damage the bus connector. If you encounter resistance when inserting the board, remove the board and try again.
- Power up the computer.

Connexion between EVA2 and computer (version PCI)

Ignore in USB version.

**This connector is
FRAGILE.**

Handle with care



Make permanent connections

Make permanent connections to each component in the system (rear panel of the interface).



The equipment must be switched off to connect the different cables.

(a) Mains connection cable

Use only the mains connection cable provided with the equipment.

(b) Connection with the computer

USB Version

Connect the two cable of the external USB module to the rear face.

PCI Version



HANDLE WITH CARE

Use only the cable provided with the equipment. Connect it between the interface and the acquisition board (in the computer). The cable should not be too stretched. Screw the connections fixing.

(c) « Mouthpiece » terminal

Plug the mouthpiece cable cautiously. Screw the fixing.

(d) Loudspeaker terminal

Connect the loudspeaker to its terminal (« Loudspeaker Left »). You can connect an other one on the second terminal (« Loudspeaker Left ») if necessary (40W, 8Ω). The loudspeaker is automatically switched off if a headphone is connected (front panel).

(e) External equipment terminal

Normally, the «EXTernal» connection is not used. Screw the «cap» on the EXT terminal.

(f) Ground

Non available in Propac version

(g) fuse

(h) tension selector

Never change its position

(i) Ventilation

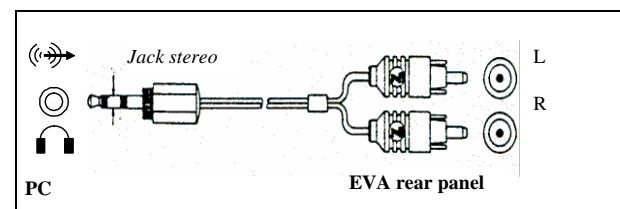
EVA2 equipment is cooled by air ventilation. The fan must works normally. Be careful that materials do not obstruct the ventilation holes.

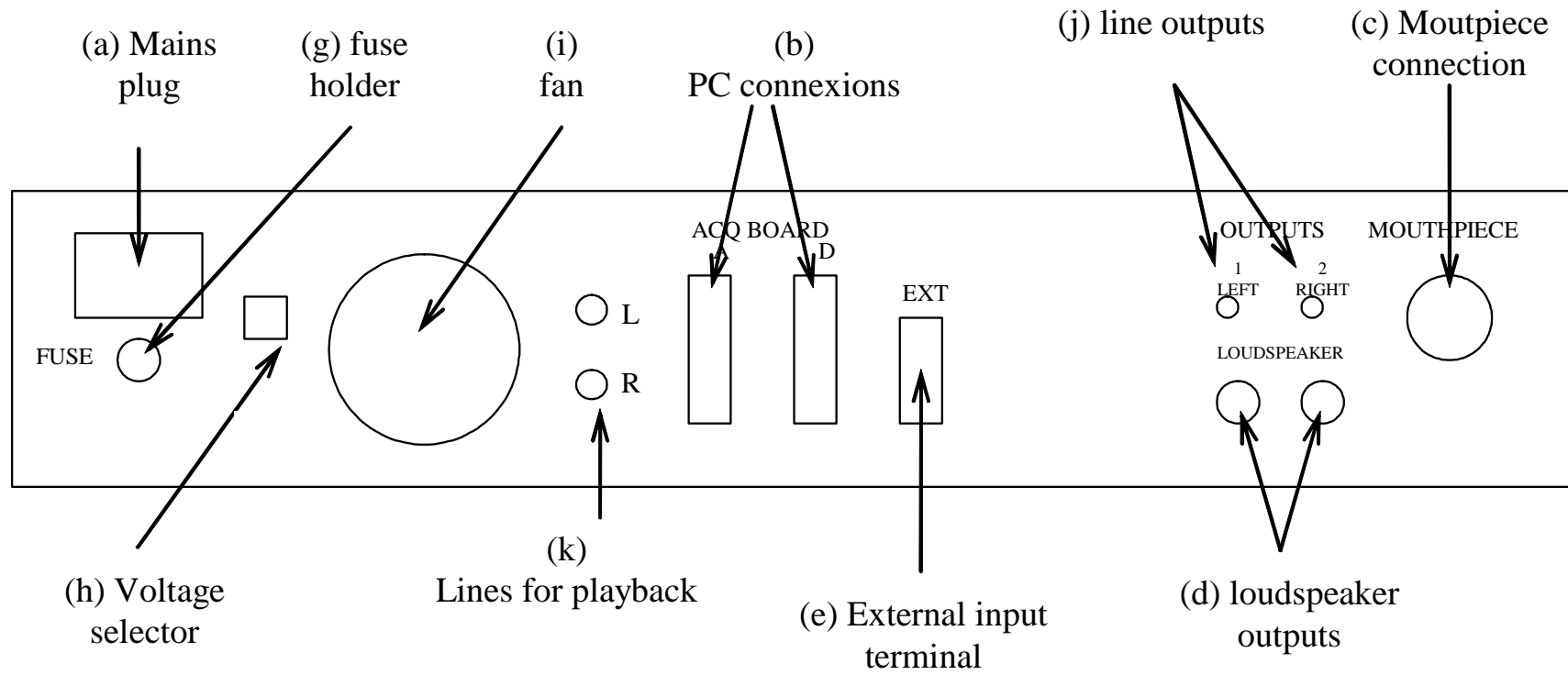
(j) line outputs

For connection to an audio tape recorder or DAT

(k) Sound lines for playback (USB Version Only)

To connect to the output of PC sound board. These lines are amplified and are playback by EVA device.





Rear panel of the interface

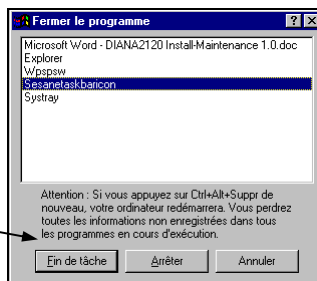
Install the EVA 2 workstation software

The software environment of the EVA workstation is named SESANE (Software Environment for Speech ANalysis and Evaluation). It installs itself automatically on the hard disk. To do so :

- a) If it is the 1st installation, go to step c)
- b) If a version of the software previous to 3.2 is available on the computer, remove the Sesane Task Bar Icon



- Use the key combination Ctrl + Alt + Del
- A dialog box appears with a list of programs
- Select the SesaneTaskBarIcon
- Stop this program



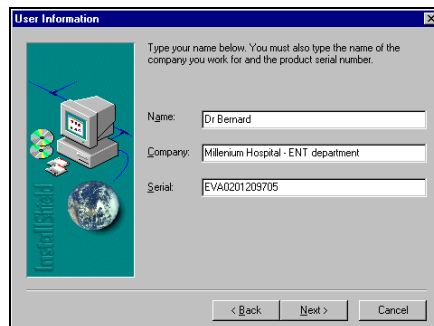
- c) Insert the CDROM. Installation is launched automatically.

NOTE : if the autorun feature of your CD-ROM is disabled (i.e. no program is launched automatically), remove the Task Bar Icon manually (go to step (b)) then launch the program setup.exe on your CD-ROM and follow step (d)

- d) Follow the instructions, until you get a dialog box requesting for information about the owner.
- Name : facultative.
 - Company : Obligatory. It is recommended to enter the hospital name or the organisation name.



Important : the text entered in this field will appear at the bottom of the documents printed by the software.



- Serial : enter the serial number of the system.
- e) click **Next** and follow instructions.

Install protection key

Plug the protection key (blue) on a USB port and follow instructions.



First test


Use the following instructions to test the equipment :

1. Switch on
2. Check that the light of the power button is on
3. Connect the microphone on the « MICRO » terminal (« INPUT1 »)
4. Turn the input selector on « MICRO » position
5. Turn the volume button in a middle position
6. Speak
7. Check that the control light is on
8. Follow step 3 to 7 for « INPUT 2 »

Cleaning and general maintenance

General cleaning

Avoid places in direct sunlight or in other places where the temperature is high.

 Do not expose the interface to vaporization, liquids, solvents...



How to clean masks and tubes

After use, clean and disinfect mask and tubes

- Mask and nasal nozzles are made in silicone Rhodorsil. They can be washed by cleaning and disinfecting agents **at normal temperature** and pressure. Use cleaning agents as Bactinyl, Sydex, Stéranios...
- The choice and use of catheter for pressure measurement is on the responsibility of qualified user.

How to clean removable parts of the « mouthpiece »

- 1) Remove masks and tubes
- 2) Unscrew the airflow ducts
 - a) to remove the oral airflow duct, loosen the screw and pull it up.
 - b) to remove the nasal airflow duct, loosen the screw and pull it.
- 3) Plunge the ducts into a cool solution with bactericidal, fungicidal and viricidal agents.
- 4) Rinse, shake and let them dry. Be sure that there is no more water into the little tubes.
To speed up this operation, you can use an hair-dryer.
- 5) Usually, it is better to clean the ducts every evening and let them dry all night long.

-  Do not put the ducts on the mouthpiece if they are not dry enough (water could damage sensors)
-  Do not unscrew grids. This process could disturb the calibration.

How to clean the « mouthpiece » and the interface

To clean this unit, use a soft, dry cloth. For very dirty surfaces, dip a soft cloth in a weak soap-and-water solution or weak detergent solution and wring well. After cleaning, wipe with a soft, dry cloth.

Troubleshooting guide

Before calling qualified staff to repair this equipment, consult these procedures to know if the problem can be solved by yourself. A simple verification or a minor setting can be sufficient for repairing. If no solution has been found, call your after sale service.

Interface

Problem	Probable cause	Resolution
The ON/OFF switch does not light on	Mains cable is not well plugged.	Ensure the mains cable is plugged
	a fuse blew	change the fuse (see after)
Interface runs correctly, but the vu-meters at screen are not functioning.	the cable between the interface and the PC is not correctly plugged..	verify the cable connection.

Audio

Problem	Probable cause	Resolution
While recording with the on stand microphone, the control indicator remains lighted off	the microphone cable is not in place.	Ensure the cable is plugged
	the input selector is not on the good position.	Turn the input selector on « MICRO » position
	Input volume is too low.	Increase the input volume
While recording with the mouthpiece microphone the control indicator remains lighted off	the mouthpiece cable is not in place.	Ensure the cable is plugged
	the input selector is not on the good position.	Turn the input selector on « MASK » position
	Input volume is too low.	Increase the input volume
While recording with a tape recorder, a DAT, or a CD, the control indicator remains lighted off	the external equipment cable is not in place.	Ensure the cable is plugged
	the cable is plugged in an input of the external equipment	Plug the cable in an output.
	the input selector is not on the good position	Turn the input selector on « LINE » position
	Input volume is too low.	Increase the input volume.
Sound is distorted	Input volume is too loud.	Decrease the input volume.
When using audio playback in software, nothing happens	Loudspeaker connection is incomplete or incorrect.	Ensure connection is correct
	Audio output level is too low.	Increase the output volume.
	A headphone is plugged on the front panel..	Unplug the headphone.

EGG

Problems with the portable Laryngograph

Problem	Cause	Action
You cannot- get any EGG signal.	The Laryngograph is not switched on.	Turn the selector on ON
	Battery is discharged	Charge it
	Level is too low	Increase the input level
	Electrodes cable is not connected.	Ensure the cable is in its socket
	Electrodes are not well placed.	Place the electrodes on either sides of the larynx

Problem in relation with the EVA equipment

Problem	Cause	Action
While recording with the EGG, the control indicator remains lighted off	the input selector is not on the good position	Turn the selector INPUT2 - RIGHT on « EGG »
	Input volume is too low	Increase the input level
	External Cap is not plugged	Screw the « cap » on the EXT terminal (cf. p.9)

Aerodynamic

Problem	Cause	Action
While recording aerodynamic parameters, the vu-meters at screen are not functioning.	the mouthpiece cable is not in place	Ensure the mouthpiece cable is plugged
	Masks or probes are not well placed.	Ensure that the masks and probes are placed with no leakage.
Records have a big shift.	Electronic sensors have an offset	click on the calibration icon before recording.

Fuse Replacement



**Before repairing, switch off the equipment.
Repairing must be done by qualified staff.**

Replacement of general fuse

Diagnosis :

Replace the general fuse if the power switch is on but the light is off (Confirm that the power cord plug is connected completely)

How to do ?

- 1) Disconnect the mains power cable.
 - 2) Unscrew the fuse holder with a tool
 - 3) Remove the fuse.
 - 4) Place a new fuse.
- Use same type.
- 4) Screw the fuse-holder
 - 5) Connect the mains cable.
 - 6) Test.
 - 7) If fuse blew again, contact your dealer.

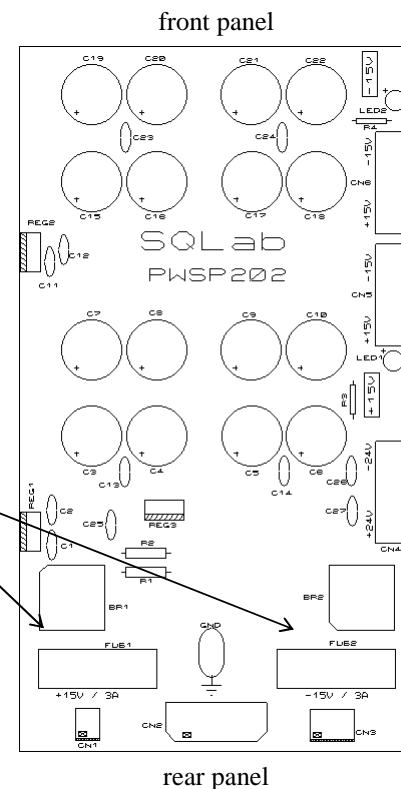
Replacement of power supply fuses

Diagnosis :

Check power supply fuses if the power switch is on, its light is on, everything is correctly connected but the equipment does not work correctly.

Procedure :

- 1) Remove the cover (take care about the earth wire connected to this cover)
- 2) Look for the power supply
- 3) Switch on the equipment. Check on the power supply if red and green lights are on.
- 4) If red light is off, replace FUS1 (+15V).
- 5) If green light is off, replace FUS2 (-15V)
- 6) Put the cover back
(check if earth wire is connected to this cover)
- 7) Test
- 8) If fuse blew again, contact your dealer.



Equipment storage and transport

Equipment storage

If the equipment is not used for a long time, protect it, especially the mouthpiece.

Avoid places such as the following :

In direct sunlight or in other places where the temperature is high.

In places where there is excessive vibration or humidity.

Such conditions might damage component parts and thereby shorten the unit's service life.

Equipment transport

If you need to send the equipment by road, railroad, or flight..., pack it up very seriously to avoid damages, especially the « mouthpiece ».