

Working safely with your Protos 3 system

Safety practices

This document describes the general safety practices and precautions that must be observed when operating the Protos 3.

This advice is intended to supplement, not supersede, the normal safety codes in the user's country. The information provided does not cover every safety procedure that should be followed. Ultimately, maintenance of a safe laboratory environment is the responsibility of the user and the user's organization.

Please consult all documentation supplied with the Protos 3 before you start working with the instrument. Carefully read the safety information in this document and in the other documentation supplied. When setting up the instrument or performing analyses or maintenance procedures, strictly follow the instructions provided.

Warning notices

We use 'Warnings' to highlight information or instructions that **MUST** be followed to avoid personal injury to yourself or other people in the vicinity.



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For example: Switch off the mains voltage and remove the mains cord before cleaning











Ensure that all instrument operators read and understand the precautions listed below.

You are advised to post a copy of the precautions near or on the instrument shelf.

The following precautions must be observed when using the Protos 3.

- Be sure that the voltage of the Protos 3 instrument corresponds to the voltage used in your laboratory.
- Never remove the bottom panels of the Protos 3 instrument without shutting down the instrument and disconnecting the instrument power cord from line power.
- The Power cord must be an appropriately rated and approved cord-set in accordance with the regulations of the country it is used in.
- Do not replace the Power cord with one of inadequate rating.

Symbols

| Symbol | Definition |
|---|---|
|  | Attention: See instructions for use |
|  | Serial Number |
|  | Symbol indicating "Not for general waste." For European Union (EU) States, this symbol should be used to mark devices that are reusable and not contaminated at the end of the device life. |
|  | This symbol is a mandatory marking for devices entering the European market to indicate conformity with the essential health and safety requirements set out in European Directives. |
|  | Symbol for "Manufacturer." This symbol shall be adjacent to the name and address of the manufacturer. |
|  | Symbol for "temperature limitation." The upper and lower temperature limits will be indicated on either side of the symbol. |
|  | Symbol indicating that the device is "fragile" and should be handled with care. |
|  | Symbol indicating the correct upright position of the transport package |

General operating conditions

The Protos 3 have been designed and tested in accordance with the safety requirements of the International Electrotechnical Commission (IEC). The Protos 3 conform to IEC61010-1 (Safety Requirements for electrical equipment for measurement, control and laboratory use) as it applies to IEC Class 1 (earthed) appliances, and therefore meet the requirements of EC directive 73/23/EEC.

If possible, avoid any adjustment, maintenance or repair to the instrument while it is open and operative. However, if any adjustment, maintenance or repair is necessary while the instrument is open, this *must* be done by a *skilled* person who is aware of the *hazards* involved.

Whenever circumstances arise that mean your Protos 3 may be unsafe, make it inoperative. In particular, a Protos 3 may be unsafe if it:

- Shows visible damage
- Fails to perform the intended measurement
- Has been subjected to severe transport stresses
- Has been subjected to prolonged storage in unfavorable conditions

Transportation and Storage Conditions

The system should only be transported and stored in its original packaging to ensure maximum protection. It is recommended to keep the original packaging.

The unit should be transported and stored in an environment -10°C to +50°C, not condensing

If you must move the imaging system any great distance please contact your local distributor to advise you about moving your system.

The Protos 3 weighs 15kg.

Environmental conditions

- The instrument should only be used under the following conditions:
- Indoors
- Altitudes below 2000m
- Ambient temperature between 5°C and 40°C
- Relative humidity below 80% for temperatures up to 31°C, decreasing linearly to 50% relative humidity at 40°C
- Electrical supply fluctuations not exceeding $\pm 10\%$ of the nominal voltage.



The protection provided by the equipment may be impaired if the operating conditions do not lie within these parameters.

Electrical Ratings

| | |
|---------------|---------------|
| Voltage range | 100V-240V AC |
| Frequency | 50/60Hz |
| Power | 2A |
| Fuse | T 6.3A H 250V |

Changing a Fuse

There are two User accessible fuses that may need to be replaced:

- These are located in the mains power socket at the rear of the instrument and are only accessible when the mains power cord has been removed.

To change the fuses:



Switch off the instrument and unplug the mains power cord from the electrical supply.

- Gently pull out the fuse holder.
- Replace the fuses with new fuses of the same type and rating. The fuse type is 20 mm x 5 mm IEC 60127-1:2006, AMD1:2011 and AMD2:2015 CSV for instruments in all countries.
- Replace the fuse holder.

Electrical safety

The instrument has been designed to protect the operator from potential electrical hazards. This section describes some recommended electrical safety practices.



Lethal voltages are present at certain points within the instrument.
When the instrument is connected to line power, removing the instrument covers is likely to expose live parts.
Even when the power switch is off, high voltages can still be present – capacitors within the instrument may still be charged even if the instrument has been disconnected from all voltage sources.

The instrument must be correctly connected to a suitable electrical supply. The supply must have a correctly installed protective conductor (earth ground) and must be installed or checked by a qualified electrician before connecting the instrument.



Any interruption of the protective conductor (earth ground) inside or outside the instrument, or disconnection of the protective conductor terminal is likely to make the instrument dangerous.

Intentional interruption of the protective conductor is prohibited



Ensure that the electricity supply inlets on the instrument are not obstructed, i.e. leave a gap to allow easy disconnection from the electricity supply.

When working with the instrument:

- Connect the instrument to a correctly installed line power outlet that has a protective conductor connection (earth ground).
- Do not operate the instrument with any covers or internal parts removed.
- Do not attempt to make internal adjustments or replacements except as directed in the manuals.
- Disconnect the instrument from all voltage sources before opening it for any adjustment, replacement, maintenance or repair. If the opened instrument must be operated for further adjustment, maintenance or repair, this must *only* be done by your supplier's Service Engineer.
- Whenever it is possible that the instrument is no longer electrically safe for use, make the instrument inoperative and secure it against any unauthorized or unintentional operation. The electrical safety of the instrument is likely to be impaired if, for example, the instrument:
 - Shows visible damage
 - Has been subjected to prolonged storage under favorable conditions
 - Has been subjected to severe stress during transportation

Electrical protection

- Insulation: Class I rating for external circuits. Only connect equipment that meets the requirements of IEC 61010-1, IEC 60950 or equivalent standards.
- Installation Category: The instruments are able to withstand transient over voltages typically present on the MAINS supply. The normal level of transient over voltages is impulse withstand (overvoltage) category II of IEC 60364-4-443.
- Pollution Degree 2: Normally only non-conductive POLLUTION occurs. Occasionally, however, temporary conductivity caused by condensation must be expected.

EMC compliance

EC directive

The Protos 3 instrument has been designed and tested to meet the requirements of the EC directive 89/336/EEC and 93/68/EEC. The Protos 3 instrument complies with the EMC standard EN61326 (EMC standard for electrical equipment for measurement, control and laboratory use) and EN55011 (ISM) class A (rf emissions).

FCC rules and regulations

This product is classified as a digital device used exclusively as industrial, commercial or medical test equipment. It is exempt from the technical standards specified in Part 15 of the FCC Rules and Regulations based on Section 15.103 (c).

Looking after your Protos 3 system

The system does not require regular maintenance or calibration other than occasional checking and cleaning.

Cleaning the imaging system



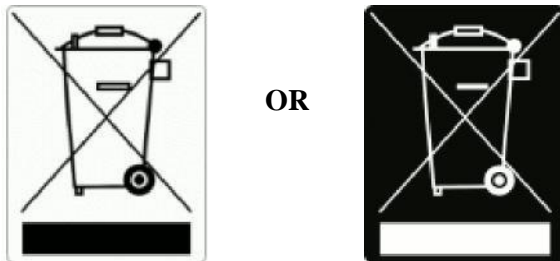
Switch off the mains voltage and remove the mains cord before cleaning.

You can clean the outside of the Protos 3 using a soft lint-free cloth, moistened if required with a little water. Mild detergent may be used, if necessary. Do not use abrasive or solvent based cleaning materials. Always perform a patch test on an inconspicuous area before you clean the entire accessory.

Avoid spilling any liquid into the body of the Protos 3 and clean any external spills immediately. If any liquid enters the main body of the instrument, make the system inoperative and contact your dealer.

Appendix A – Disposing of your Imaging system

The Waste Electrical and Electronic Equipment (WEEE) Directive



A label with a crossed-out wheeled bin symbol and a rectangular bar indicates that the product is covered by the Waste Electrical and Electronic Equipment (WEEE) Directive and must **not** be disposed of as unsorted municipal waste. Any products marked with this symbol must be collected separately, and in accordance with the regulatory guidelines in your area.

The objectives of the WEEE Directive are to preserve, protect and improve the quality of the environment, protect human health, and utilize natural resources prudently and rationally. Specific treatment of WEEE is indispensable in order to avoid the dispersion of pollutants into the recycled material or waste stream. Such treatment is the most effective means of protecting the customer's environment.

WEEE instructions for Systems

The requirements for waste collection reuse, recycling, and recovery programs are set by the regulatory authority in your location. Contact your local responsible person (such as your laboratory manager) or authorized representative for information regarding applicable disposal regulations. For information specific to the Protos 3, contact SYNBIOSIS at:

- Website: www.synbiosis.com
- Email: support@synbiosis.com
- Mail and telephone:

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| Synbiosis Europe office Beacon House Nuffield Road Cambridge CB4 1TF United Kingdom Tel: +44 (0)1223 727123 | Synbiosis USA office 5103 Pegasus Court, Suite L Frederick MD 21704 USA Tel: 800 686 4407/301 662 2863 |
|---|---|

N.B. Products from other manufacturers may also form a part of your Protos 3 system. These other manufacturers are directly responsible for the collection and processing of their own waste products under the terms of the WEEE Directive. Please contact these manufacturers directly before disposing of any of their products.