

# Hardware User's Manual

---

## PROBES BOX

Pyrogenic Test



### References:

PROBOX15	(76-0295)	Scanner for 15 probes
PROBOX30	(76-0296)	Scanner for 30 probes
PROBOX30E	(76-0297)	Extension for PROBOX30 up to 60 rabbits

### Version:

V30/06/2015

---

### Limitation of Liability

PANLAB does not accept responsibility, under any circumstances, for any harm or damage caused directly or indirectly by the incorrect interpretation of what is expressed in the pages of this manual.

Some symbols may have more than one interpretation by professionals unaccustomed to their usage.








PANLAB reserves the right to modify, in part or in total, the contents of this document without notice.

---

## 1. SYMBOLS TABLE

---

Recognising the symbols used in the manual will help to understand their meaning:

DESCRIPTION	SYMBOL
Warning about operations that must not be done because they can damage the equipment	
Warning about operations that must be done, otherwise the user can be exposed to a hazard.	
Protection terminal ground connection.	
Warning about a hot surface which temperature may exceed 65°C	
Warning about a metal surface that can supply electrical shock when it's touched.	
Decontamination of equipments prior to disposal at the end of their operative life	
Waste Electrical and Electronic Equipment Directive (WEEE)	

## 2. GOOD LABORATORY PRACTICE

---

Check all units periodically and after periods of storage to ensure they are still fit for purpose. Investigate all failures which may indicate a need for service or repair.

Good laboratory practice recommends that the unit be periodically serviced to ensure the unit is suitable for purpose. You must follow preventive maintenance instructions. In case equipment has to be serviced you can arrange this through your distributor. Prior to Inspection, Servicing, Repair or Return of Laboratory Equipment the unit must be cleaned and decontaminated.



### Decontamination prior to equipment disposal

In use this product may have been in contact with bio hazardous materials and might therefore carry infectious material. Before disposal the unit and accessories should all be thoroughly decontaminated according to your local environmental safety laws.

### 3. UNPACKING AND EQUIPMENT INSTALATION

---



**WARNING:** Failure to follow the instructions in this section may cause equipment faults or injury to the user.


- A. No special equipment is required for lifting but you should consult your local regulations for safe handling and lifting of the equipment.
- B. Inspect the instrument for any signs of damage caused during transit. If any damage is discovered, do not use the instrument and report the problem to your supplier.
- C. Ensure all transport locks are removed before use. The original packing has been especially designed to protect the instrument during transportation. It is therefore recommended to keep the original carton with its foam parts and accessories box for re-use in case of future shipments. Warranty claims are void if improper packing results in damage during transport.
- D. Place the equipment on a flat surface and leave at least 10 cm of free space between the rear panel of the device and the wall. Never place the equipment in zones with vibration or direct sunlight.
- E. Once the equipment is installed in the final place, the main power switch must be easily accessible.
- F. Only use power cords that have been supplied with the equipment. In case that you have to replace them, the spare ones must have the same specs that the original ones.



- G. Make sure that the AC voltage in the electrical network is the same as the voltage selected in the equipment. **Never connect the equipment to a power outlet with voltage outside these limits.**



**WARNING**

For electrical safety reasons you only can connect equipment to power outlets provided with earth connections .

This equipment can be used in installations with category II over-voltage according to the General Safety Rules.

The manufacturer accepts no responsibility for improper use of the equipment or the consequences of use other than that for which it has been designed.

### PC Control

Some of these instruments are designed to be controlled from a PC. To preserve the integrity of the equipment it is essential that the attached PC itself conforms to basic safety and EMC standards and is set up in accordance with the manufacturers' instructions. If in doubt consult the information that came with your PC. In common with all computer operation the following safety precautions are advised.



- WARNING**
- To reduce the chance of eye strain, set up the PC display with the correct viewing position, free from glare and with appropriate brightness and contrast settings
  - To reduce the chance of physical strain, set up the PC display, keyboard and mouse with correct ergonomic positioning, according to your local safety guidelines.

### **Class A equipment is intended for use in an industrial environment.**



- WARNING**
- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with these instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

## 4. MAINTENANCE

---



**WARNING:** Failure to follow the instructions in this section may cause equipment fault.

- **PRESS KEYS SOFTLY** – Lightly pressing the keys is sufficient to activate them.
- Equipments do not require being disinfected, but cleaned for removing urine, faeces and odour. To do so, we recommend using a wet cloth or paper with soap (which has no strong odour). **NEVER USE ABRASIVE PRODUCTS OR DISSOLVENTS.**
- **NEVER** pour water or liquids on the equipment.
- Once you have finished using the equipment turn it off with the main switch. Clean and check the equipment so that it is in optimal condition for its next use.
- The user is only authorised to replace fuses with the specified type when necessary.



Figure 1. Power inlet, main switch and fuse holder.

### FUSE REPLACEMENT OR VOLTAGE SETTING CHANGE

In case of an over-voltage or other incident in the AC net making it impossible to turn on the equipment, or if the equipment voltage setting is incorrect, check fuses according to the following procedure.

- 1 Remove power cord from the power inlet.

- Open fuse-holder by pulling the flange with a regular screwdriver.



Figure 2. Open fuse-holder door.

- Extract fuse holder using the screwdriver.

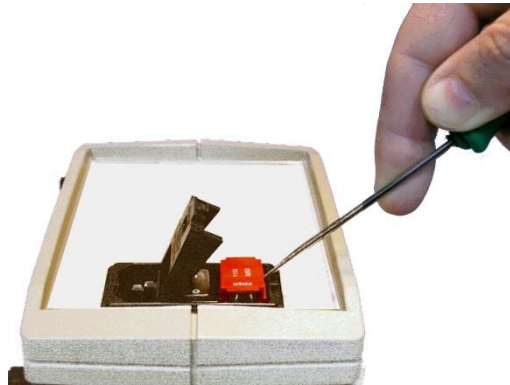


Figure 3. Extract fuse-holder.

- Replace fuses if necessary. Insert fuses in the fuse-holder in the correct position.



CORRECT



INCORRECT

Figure 4. Fuses position.

- Insert the fuse-holder again, positioning it according to the voltage in the AC net.



115V POSITON



230V POSITION

Figure 5 Fuse holder position.

- If the fuses blow again, unplug the equipment and contact technical service.



For electrical safety reasons, never open the equipment. The power supply has dangerous voltage levels.

## 5. TABLE OF CONTENTS

---

<b>1. SYMBOLS TABLE</b>	<b>2</b>
<b>2. GOOD LABORATORY PRACTICE</b>	<b>2</b>
<b>3. UNPACKING AND EQUIPMENT INSTALATION</b>	<b>3</b>
<b>4. MAINTENANCE</b>	<b>5</b>
<b>5. TABLE OF CONTENTS</b>	<b>7</b>
<b>6. INTRODUCTION</b>	<b>8</b>
<b>7. EQUIPMENT DESCRIPTION</b>	<b>9</b>
7.1. PROBES BOX 15 FRONT PANEL	9
7.2. PROBES BOX 30 FRONT PANEL	9
7.3. CONTROL UNIT REAR PANEL	10
<b>8. EQUIPMENT CONNECTION</b>	<b>11</b>
8.1. PROBES BOX 15	11
8.2. PROBES BOX 30	13
8.3. PROBES BOX 45	15
8.4. PROBES BOX 60	17
<b>9. WORKING WITH THE EQUIPMENT</b>	<b>19</b>
9.1. MEASURING PROCEDURE	19
9.2. CLEANING THE TEMPERATURE PROBE	19
9.3. TEMPERATURE PROBE DISINFECTION	19
9.4. TEMPERATURE PROBE STERILIZATION	19
<b>10. TROUBLESHOOTING</b>	<b>20</b>
<b>11. PREVENTIVE MAINTENANCE</b>	<b>21</b>
<b>12. TECHNICAL SPECIFICATIONS</b>	<b>22</b>



## 6. INTRODUCTION

---

The **Probes Box** used with **TEMPERCO** software represents PANLAB's commitment to providing laboratories and pharmaceutical companies with an effective system to obtain reliable results in pyrogenic tests.



Figure 6. Probes Box 30.

Rabbit pyrogenic tests are commonly conducted for detecting possible pyrogenic contamination in injectable pharmaceuticals. This is because virtually all raw materials involved in a production process, and factory employees themselves, are potential sources of pyrogenic contamination. Raw material screening is an important step in any standard quality control procedure. In this context, early endotoxin detection was accomplished by injecting rabbits with the sample and observing the response in their body temperature.

The system is composed of YSI temperature probes, the **Probes Box** control unit and the **TEMPERCO** software.

## 7. EQUIPMENT DESCRIPTION

---

### 7.1. PROBES BOX 15 FRONT PANEL

---

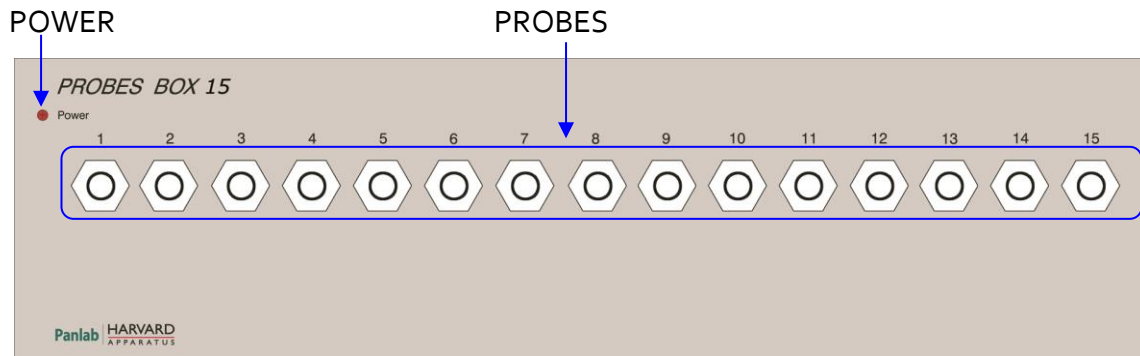


Figure 7. Probes Box 15 front panel.

- **POWER:** 3 mm red coloured led that remains on while control unit is on.
- **PROBES:** There are 15 sockets for rectal temperature probes.

### 7.2. PROBES BOX 30 FRONT PANEL

---

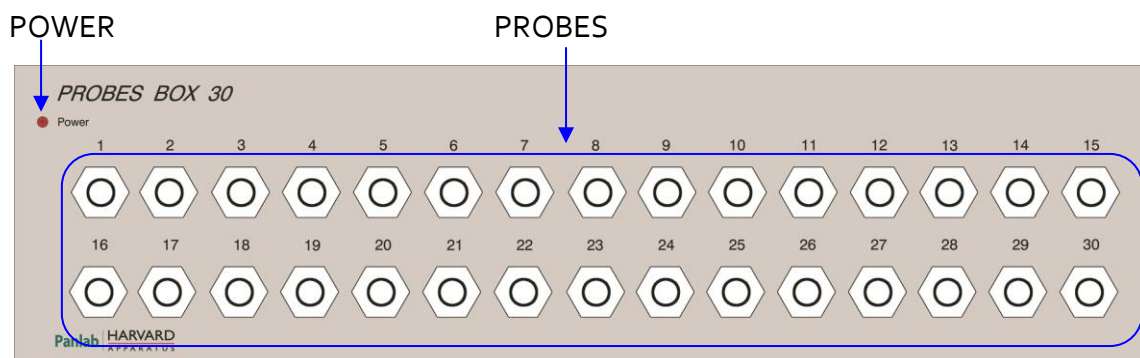


Figure 8. Probes Box 30 front panel.

- **POWER:** 3 mm red coloured led that remains on while control unit is on.
- **PROBES:** There are 30 sockets for rectal temperature probes.

### 7.3. CONTROL UNIT REAR PANEL

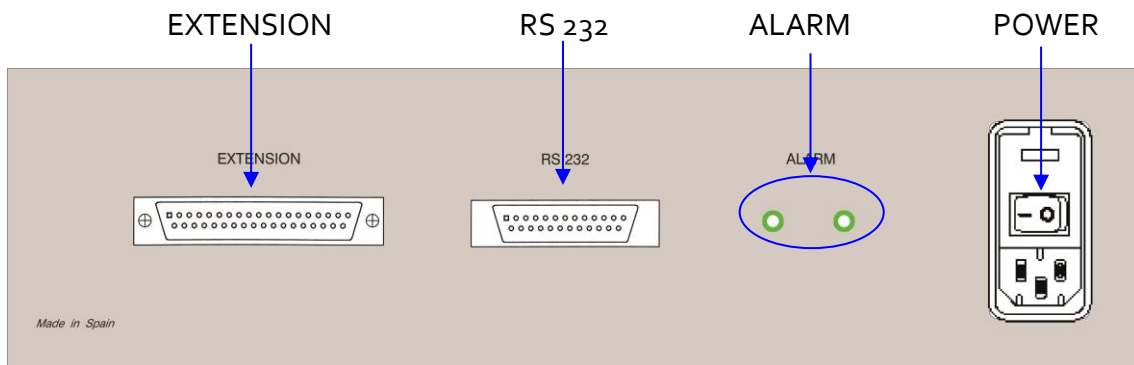


Figure 9. Rear panel.

- **EXTENSION:** DB37 connector used to connect two control units, when the system has two control units. When the system only has one control unit this connector is not present.
- **RS-232:** DB25 connector used to connect the main control unit with the computer serial port. When the system has two control units, only the first one has this connector.
- **ALARM:** There are two female connectors that close a contact if an alarm is activated. These female connectors can be used to activate any kind of alarm.
- **POWER:** Main switch, power inlet and fuse holder. When the system has two control units, only the first one has this connector.

## 8. EQUIPMENT CONNECTION

### 8.1. PROBES BOX 15

We will use a Probes Box 15 control unit to work with up to 15 temperature probes. In this schematic the necessary cables and connections are shown. Only two rectal probes are shown connected to simplify the schematic.

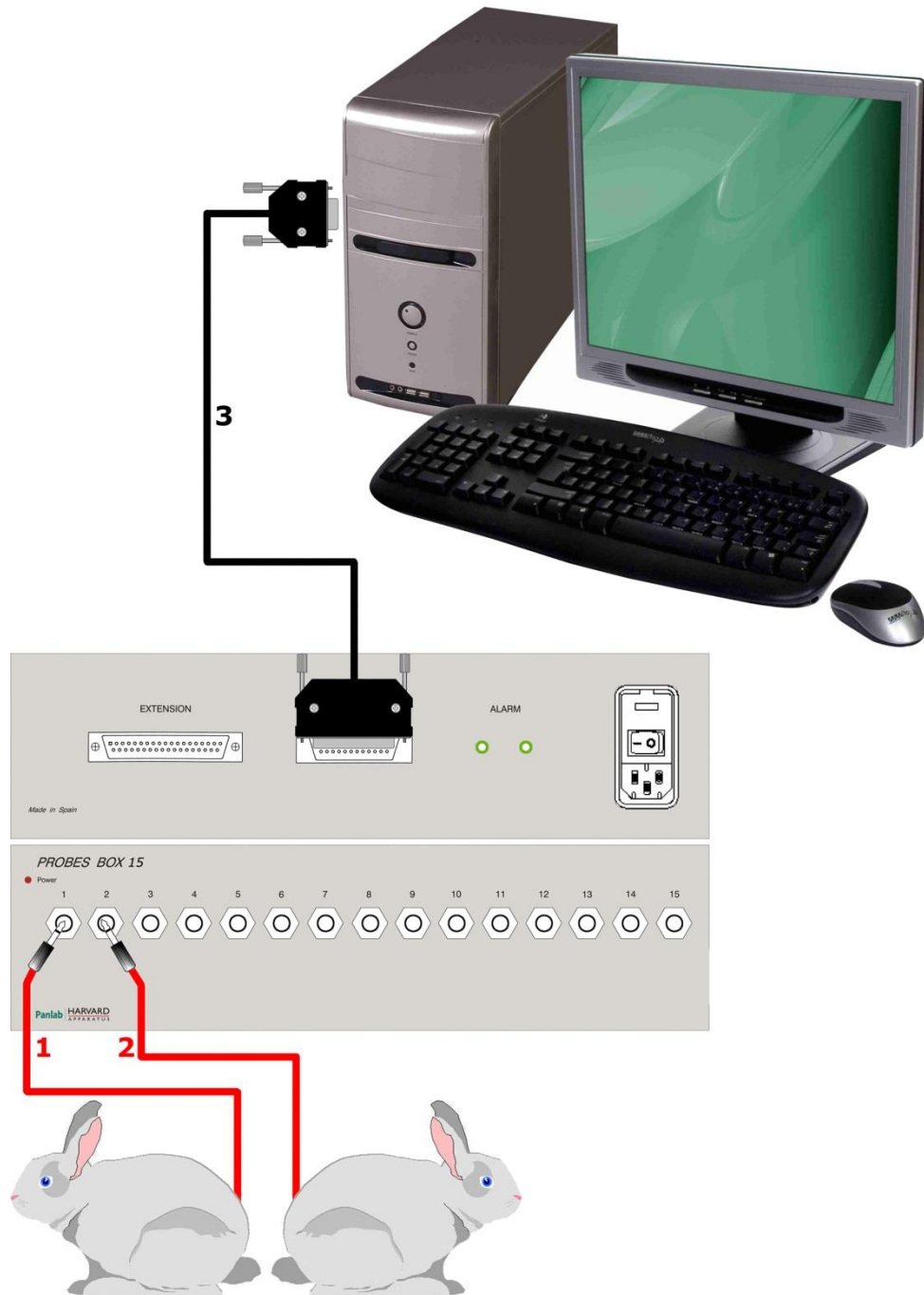


Figure 10. Probes Box 15 schematic connection.

The necessary cables and connections are listed in the following table:

	<b>FROM</b>	<b>TO</b>	<b>CABLE</b>
1*	Probes Box Probe 1	Animal 1	YSI Rectal Probe
2*	Probes Box Probe 2	Animal 2	YSI Rectal Probe
3	Probes Box RS 232	Computer serial port	DB25 to DB9 cable

\* Only two rectal probes are shown connected to simplify the schematic. In this example, however, up to 15 rectal probes would be connected.

## 8.2. PROBES BOX 30

A Probes Box 30 control unit will be used to work with up to 30 temperature probes. The necessary cables and connections are shown in this schematic. Only two rectal probes are shown connected in order to simplify the schematic.

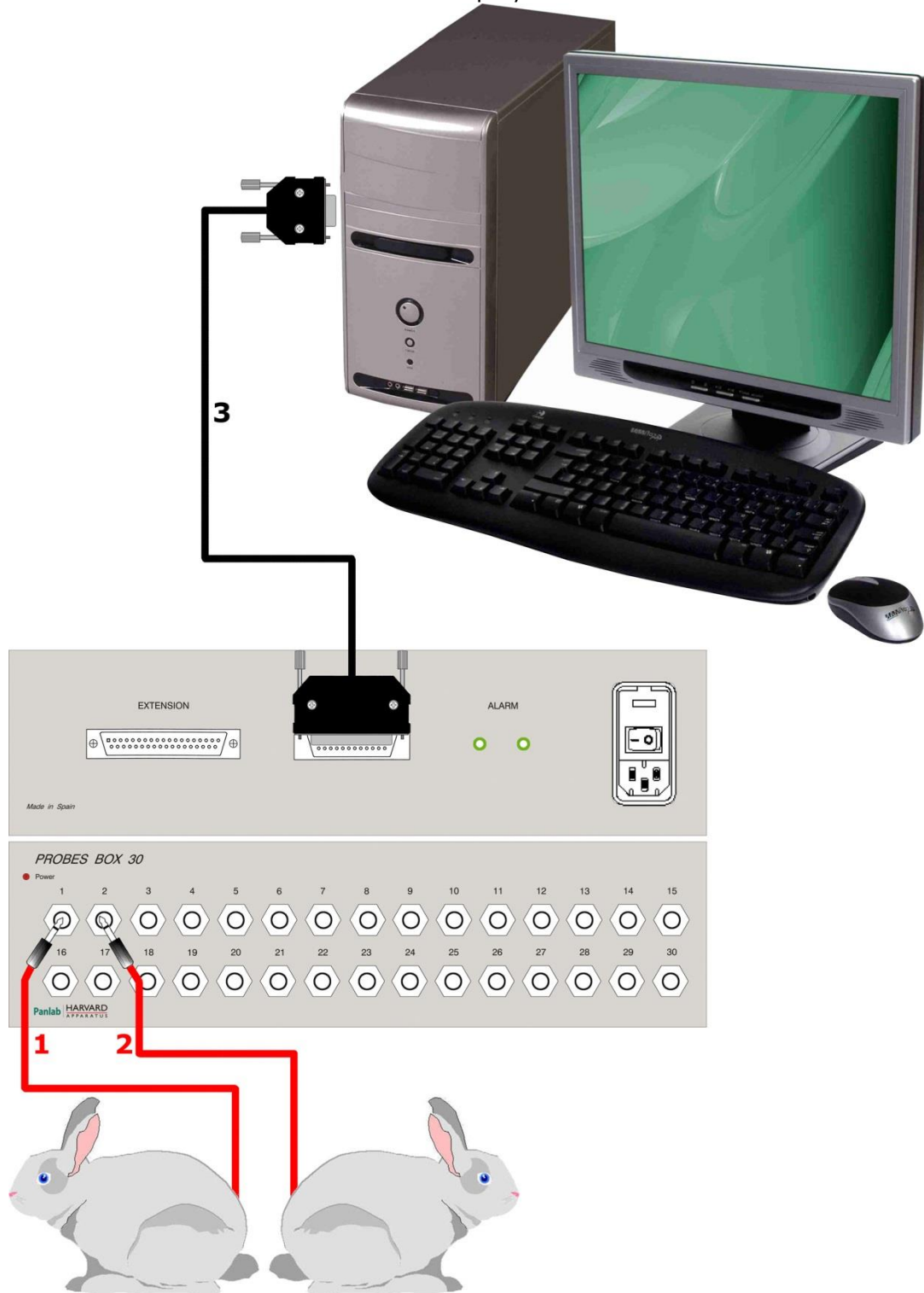


Figure 11. Probes Box 30 schematic connection.

The necessary cables and connections are listed in the following table:

	<b>FROM</b>	<b>TO</b>	<b>CABLE</b>
1*	Probes Box Probe 1	Animal 1	YSI Rectal Probe
2*	Probes Box Probe 2	Animal 2	YSI Rectal Probe
3	Probes Box RS 232	Computer serial port	DB25 to DB9 cable

\* Only two rectal probes have been connected to simplify the schematic. In this example, however, up to 30 rectal probes would be connected.

### 8.3. PROBES BOX 45

A Probes Box 30 control unit would be used as main, connected to a Probes 15 control unit, to work with up to 45 temperature probes. The necessary cables and connections can be seen in this schematic. Only four rectal probes are shown connected in order to simplify the schematic.

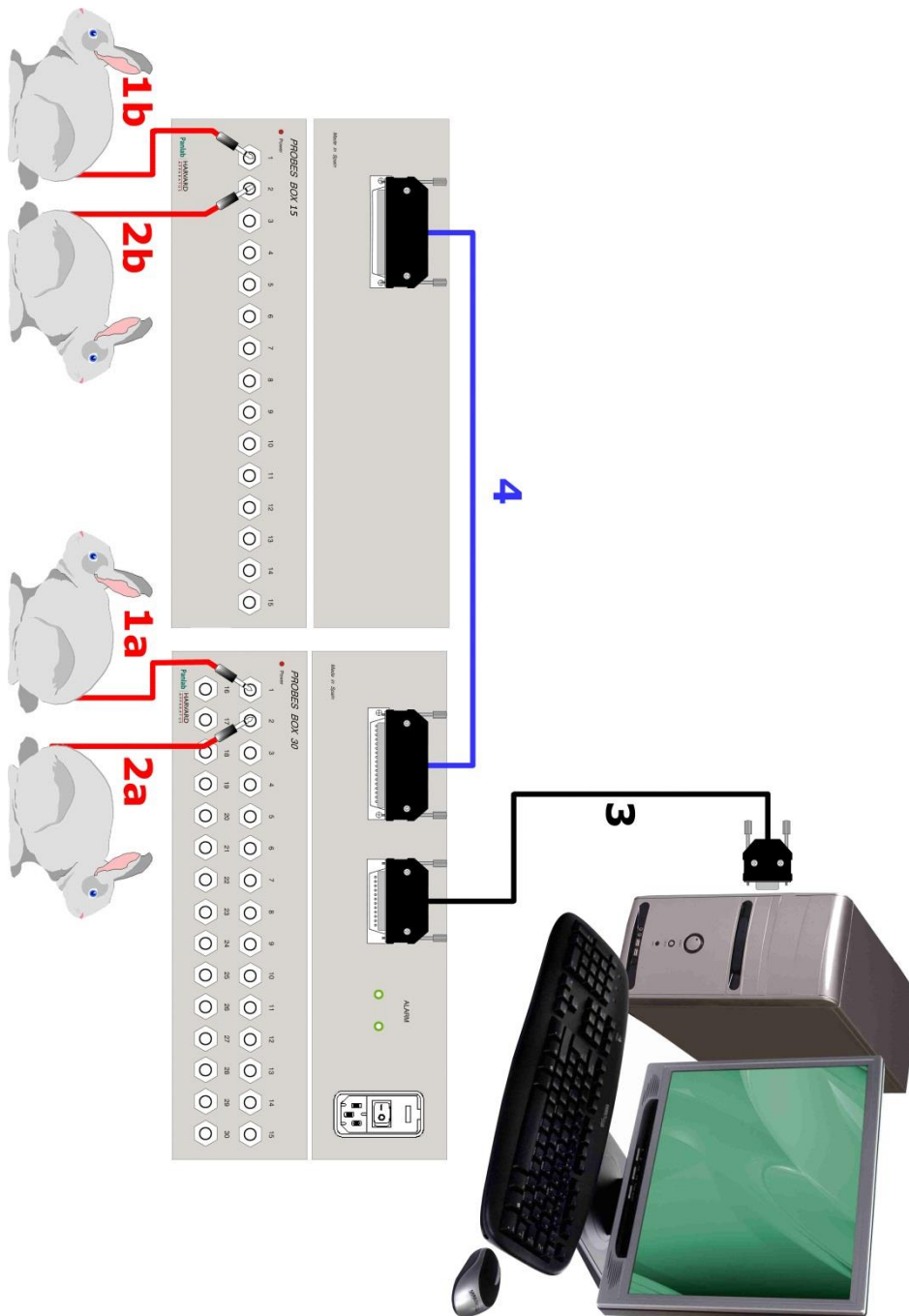


Figure 12. Probes Box 45 schematic connection.



The necessary cables and connections are listed in the following table:

	<b>FROM</b>	<b>TO</b>	<b>CABLE</b>
1a*	Probes Box A Probe 1	Animal 1 A	YSI Rectal Probe
2a*	Probes Box A Probe 2	Animal 2 A	YSI Rectal Probe
1b*	Probes Box B Probe 1	Animal 1 B	YSI Rectal Probe
2b*	Probes Box B Probe 2	Animal 2 B	YSI Rectal Probe
3	Probes Box A RS 232	Computer serial port	DB25 to DB9 cable
4	Probes Box A Expansion	Probes Box B Expansion	DB37 cable

\* Only two rectal probes are shown connected to each control unit to simplify the schematic. In this example, however, up to 45 rectal probes would be connected.

### 8.4. PROBES BOX 60

Two Probes Box 30 control units will be used to work with up to 60 temperature probes. The necessary cables and connections are shown in this schematic. Only four rectal probes are shown connected to simplify the schematic.

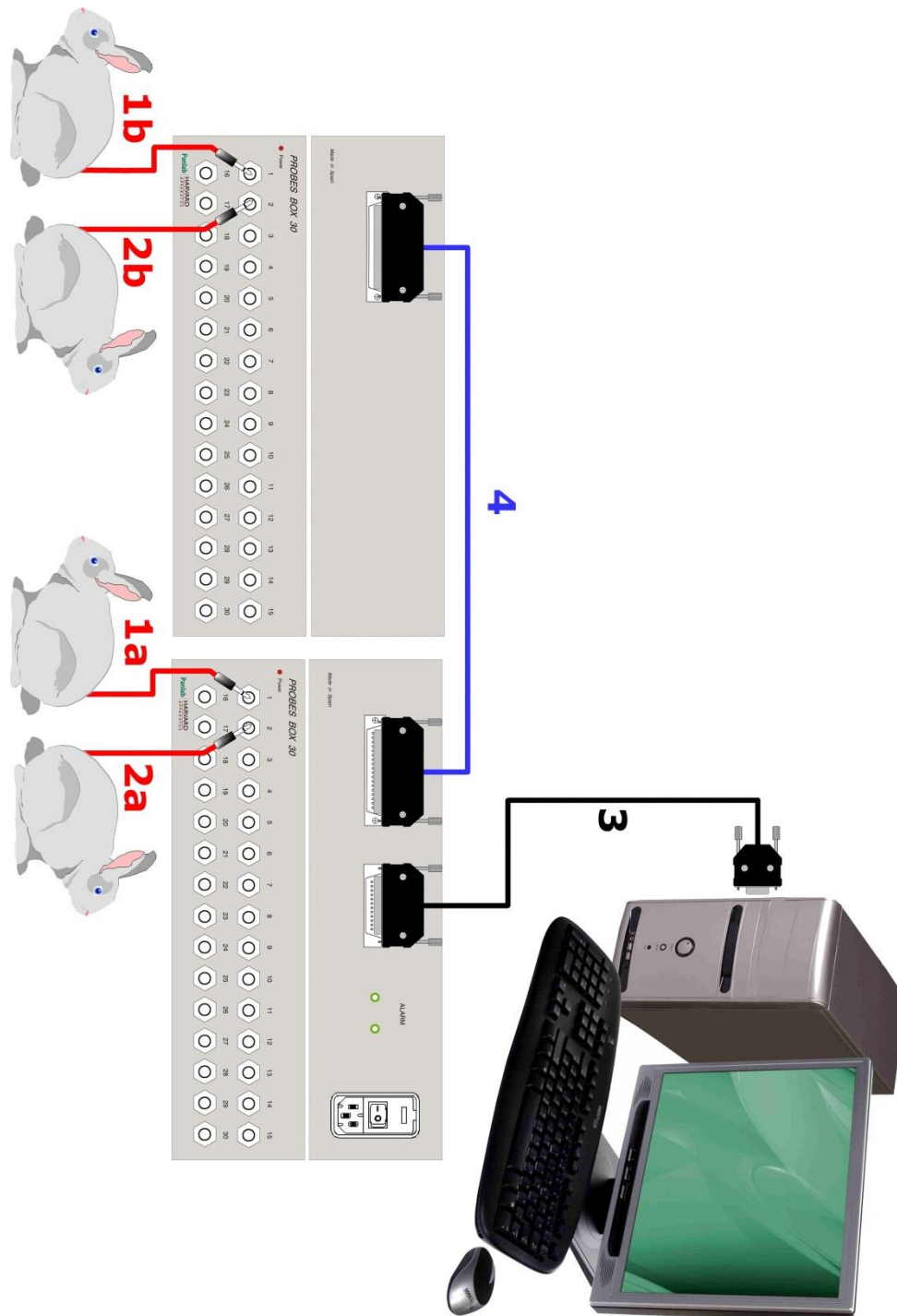


Figure 13. Probes Box 60 schematic connection.

The necessary cables and connections are listed in the following table:

	<b>FROM</b>	<b>TO</b>	<b>CABLE</b>
1a*	Probes Box A Probe 1	Animal 1 A	YSI Rectal Probe
2a*	Probes Box A Probe 2	Animal 2 A	YSI Rectal Probe
1b*	Probes Box B Probe 1	Animal 1 B	YSI Rectal Probe
2b*	Probes Box B Probe 2	Animal 2 B	YSI Rectal Probe
3	Probes Box A RS 232	Computer serial port	DB25 to DB9 cable
4	Probes Box A Expansion	Probes Box B Expansion	DB37 cable

\* Only two rectal probes are shown connected to each control unit to simplify the schematic. In this example, however, up to 60 rectal probes would be connected.

## 9. WORKING WITH THE EQUIPMENT

---

### 9.1. MEASURING PROCEDURE

---

Before working with the equipment, it will be necessary to calibrate temperature with the pattern temperature probes and the **Temperco** program. For further information on the procedure read the program's user manual.

1. Connect cables as shown in chapter **¡Error! No se encuentra el origen de la referencia.** of this manual.
2. Turn on the **Probes Box** control unit.
3. Run the **Temperco** program.
4. Follow the instructions of the program to carry out the experiment.
5. Once the experiment has ended, close the **Temperco** program, turn off the control unit and clean the equipment so that it is ready for the next use.



**WARNING:** Transmission speed in the **Probes Box** RS-232 port is slow. That is why it is only advisable to connect it to a real COM port or to the USB to COM port converter supplied by Panlab. Using a third party USB to COM port converter may cause the equipment to not work properly.

### 9.2. CLEANING THE TEMPERATURE PROBE

---

Read the temperature probe manual in order to follow the manufacturer recommendations.

### 9.3. TEMPERATURE PROBE DISINFECTION

---

Read the temperature probe manual in order to follow the manufacturer recommendations.

### 9.4. TEMPERATURE PROBE STERILIZATION

---

Read the temperature probe manual in order to follow the manufacturer recommendations.

## 10. TROUBLESHOOTING

---

This table features instructions to solve the most frequent problems.

PROBLEM	SOLUTION
The equipment does not start up.	<ul style="list-style-type: none"> <li>• Ensure that the voltage of mains is the same as that selected in the fuse holder.</li> <li>• Check the condition of the fuses.</li> </ul>
<b>Temperco</b> shows a strange value in the temperature of a channel.	<ul style="list-style-type: none"> <li>• Make sure the temperature probe is properly connected on the rear panel. (without temperature probe connected <b>Temperco</b> shows a value of 33°C)</li> <li>• If there is a probe connected, change the probe of channel to see if the problem is in the probe or in the channel.</li> <li>• Outside the measurement range (33°C-43 °C) the value shown on <b>Temperco</b> is not accurate. If the temperature is lower than 33°C <b>Temperco</b> will show 33°C and if the temperature is higher than 43°C <b>Temperco</b> will show 43°C.</li> </ul>
The equipment does not send data to <b>Temperco</b> .	<ul style="list-style-type: none"> <li>• Make sure your equipment is connected to PC via RS-232.</li> <li>• Check that <b>Temperco</b> settings so that the serial port selected is correct.</li> <li>• Restart the equipment and the PC to do a RESET in communications.</li> <li>• If you are using an USB to RS232 adapter check that it is able to send data at low speed (see WARNING on page 19 )</li> </ul>

## 11. PREVENTIVE MAINTENANCE

---

	EXPERIMENT	WEEKLY	SERVICE
CLEANING THE TEMPERATURE PROBE	<input checked="" type="checkbox"/>		
DESINFECTING THE TEMPERATURE PROBE		<input checked="" type="checkbox"/>	
STERILIZING THE TEMPERATURE PROBE <sup>1</sup>			<input checked="" type="checkbox"/>

---

<sup>1</sup>You must sterilize the temperature probe before sending it back for servicing.

## 12. TECHNICAL SPECIFICATIONS

---

<b>POWER SUPPLY</b> Input voltage: Frequency: Fuse: Maximum Power: Conducted Noise:	115 / 230V~ 50 /60 Hz 2 fuses 5x20mm 500mA 250V Fast 18 W EN55011 /CISPR11 class B
<b>ENVIRONMENTAL CONDITIONS</b> Operating temperature: Operating relative humidity: Storage temperature:	10°C to +40°C 0% to 85% RH, non-condensing 0°C to +50°C, non-condensing
<b>COMUNICATIONS OUTPUT</b> Standard Interface: Connector:	RS232C Delta 25 contacts female connector
<b>EXPANSION CONNECTOR</b> <u>Pin</u> 1 to 30 31 to 36 37	<u>Function</u> Input 1 to 30 GND +15 V
<b>ALARM</b> Relay:	5A
<b>TEMPERATURE MEASUREMENT</b> Range of temperature readings Temperature precision Probe model required Probe temperature reading Renewal of the reading of each probe	33°C – 43°C 0.1°C YSI series 400 Continuous (analogue) >5s, controlled by Temperco
<b>DIMENSIONS</b> Width x Height x Depth: Weight:	340mm x 110mm x 340 mm 5.44 kg

**DECLARACIÓN DE CONFORMIDAD  
DECLARATION OF CONFORMITY  
DECLARATION DE CONFORMITÉ**

Nombre del fabricante: **Panlab s.l.u.**  
 Manufacturer's name: [www.panlab.com](http://www.panlab.com)  
 Nom du fabricant: [info@panlab.com](mailto:info@panlab.com)

Dirección del fabricante: Energía, 112  
 Manufacturer's address: 08940 Cornellà de Llobregat  
 Adresse du fabricant: Barcelona SPAIN

Declara bajo su responsabilidad que el producto: **PYROGENIC TEST**  
 Declares under his responsibility that the product:  
 Déclare sous sa responsabilité que le produit:

Marca / Brand / Marque: **PANLAB**

Modelo / Model / Modèle: **PROBES BOX**

Cumple los requisitos esenciales establecidos por la Unión Europea en las directivas siguientes:  
 Fulfills the essential requirements established by The European Union in the following directives:  
 Remplit les exigences essentielles établies pour l'Union Européenne selon les directives suivantes:

<b>2006/95/EC</b>	Directiva de baja tensión / Low Voltage / Basse tension
<b>2004/108/EC</b>	Directiva EMC / EMC Directive / Directive CEM
<b>2012/19/EU</b>	La Directiva de Residuos de Aparatos Eléctricos y Electrónicos (WEEE) / The Waste Electrical and Electronic Equipment Directive (WEEE) / Les déchets d'équipements électriques et électroniques (WEEE)
<b>2011/65/EU</b>	Restricción de ciertas Sustancias Peligrosas en aparatos eléctricos y electrónicos (ROHS) / Restriction of the use of certain Hazardous Substances in electrical and electronic equipment (ROHS) / Restriction de l'utilisation de certaines substances dangereuses dans les équipements électriques et électroniques (ROHS)
<b>2006/42/EC</b>	Directiva mecánica / Machinery directive / Directive mécanique

Para su evaluación se han aplicado las normas armonizadas siguientes:  
 For its evaluation, the following harmonized standards were applied:  
 Pour son évaluation, nous avons appliqué les normes harmonisées suivantes:

Seguridad / Safety / Sécurité:	<b>EN61010-1:2011</b>
EMC:	<b>EN61326-1:2013 Class A<sup>1</sup></b>
Safety of machinery:	<b>EN ISO 12100:2010</b>

<sup>1</sup>This equipment complies with the limits for class A equipment in accordance with CISPR 11 definition and is classed as a Class A digital device, pursuant to CFR Title 47 part 15 of the FCC Rules and is intended to be used in an industrial environment.

En consecuencia, este producto puede incorporar el marcado CE:  
 Consequently, this product can incorporate the CE marking:  
 En conséquence, ce produit peut incorporer le marquage CE:



En representación del fabricante:  
 Manufacturer's representative:  
 En représentation du fabricant:

Carme Canalís  
 General Manager  
 Panlab s.l.u., a division of Harvard BioScience

Cornellà de Llobregat, Spain  
 30/04/2014



**(GB) Note on environmental protection:**



After the implementation of the European Directive 2002/96/EU in the national legal system, the following applies:

Electrical and electronic devices may not be disposed of with domestic waste. Consumers are obliged by law to return electrical and electronic devices at the end of their service lives to the public collecting points set up for this purpose or point of sale. Details to this are defined by the national law of the respective country. This symbol on the product, the instruction manual or the package indicates that a product is subject to these regulations. By recycling, reusing the materials or other forms of utilising old devices, you are making an important contribution to protecting our environment.

**(E) Nota sobre la protección medioambiental:**



Después de la puesta en marcha de la directiva Europea 2002/96/EU en el sistema legislativo nacional, Se aplicara lo siguiente:

Los aparatos eléctricos y electrónicos, así como pilas y baterías, no se deben tirar a la basura doméstica. El usuario está legalmente obligado a llevar los aparatos eléctricos y electrónicos, así como pilas y baterías, al final de su vida útil a los puntos de recogida municipales o devolverlos al lugar donde los adquirió. Los detalles quedaran definidos por la ley de cada país. El símbolo en el producto, en las instrucciones de uso o en el embalaje hace referencia a ello. Gracias al reciclaje, a la reutilización de materiales i a otras formas de reciclaje de aparatos usados, usted contribuirá de forma importante a la protección de nuestro medio ambiente.

**(F) Remarques concernant la protection de l'environnement :**



Conformément à la directive européenne 2002/96/CE, et afin d'atteindre un certain nombre d'objectifs en matière de protection de l'environnement, les règles suivantes doivent être appliquées.

Elles concernent les déchets d'équipement électriques et électroniques. Le pictogramme "picto" présent sur le produit, son manuel d'utilisation ou son emballage indique que le produit est soumis à cette réglementation. Le consommateur doit retourner le produit usager aux points de collecte prévus à cet effet. Il peut aussi le remettre à un revendeur. En permettant enfin le recyclage des produits, le consommateur contribuera à la protection de notre environnement. C'est un acte écologique.

**(D) Hinweis zum Umweltschutz:**



Ab dem Zeitpunkt der Umsetzung der europäischen Richtlinie 2002/96/EU in nationales Recht gilt folgendes:

Elektrische und elektronische Geräte dürfen nicht mit dem Hausmüll entsorgt werden. Der Verbraucher ist gesetzlich verpflichtet, elektrische und elektronische Geräte am Ende ihrer Lebensdauer an den dafür eingerichteten, öffentlichen Sammelstellen oder an die Verkaufsstelle zurückzugeben. Einzelheiten dazu regelt das jeweilige Landesrecht. Das Symbol auf dem Produkt, der Gebrauchsanleitung oder der Verpackung weist auf diese Bestimmungen hin. Mit der Wiederverwertung, der stofflichen Verwertung oder anderer Formen der Verwertung von Altgeräten leisten Sie einen wichtigen Beitrag zum Schutz unserer Umwelt.

**(I) Informazioni per protezione ambientale:**



Dopo l'implementazione della Direttiva Europea 2002/96/EU nel sistema legale nazionale, ci sono le seguenti applicazioni:

I dispositivi elettrici ed elettronici non devono essere considerati rifiuti domestici. I consumatori sono obbligati dalla legge a restituire i dispositivi elettrici ed elettronici alla fine della loro vita utile ai punti di raccolta collerici preposti per questo scopo o nei punti vendita. Dettagli di quanto riportato sono definiti dalle leggi nazionali di ogni stato. Questo simbolo sul prodotto, sul manuale d'istruzioni o sull'imballo indicano che questo prodotto è soggetto a queste regole. Dal riciclo, e re-utilizzo del material o altre forme di utilizzo di dispositivi obsoleti, voi renderete un importante contributo alla protezione dell'ambiente.

**(P) Nota em Protecção Ambiental:**



Após a implementação da directiva comunitária 2002/96/EU no sistema legal nacional, o seguinte aplica-se:

Todos os aparelhos eléctricos e electrónicos não podem ser despejados juntamente com o lixo doméstico. Consumidores estão obrigados por lei a colocar os aparelhos eléctricos e electrónicos sem uso em locais públicos específicos para este efeito ou no ponto de venda. Os detalhes para este processo são definidos por lei pelos respectivos países. Este símbolo no produto, o manual de instruções ou a embalagem indicam que o produto está sujeito a estes regulamentos. Reciclando, reutilizando os materiais dos seus velhos aparelhos, esta a fazer uma enorme contribuição para a protecção do ambiente.