# GPS011-EC
# GPS011-US
# GPS011-JP
# Galvo Scanner System
# Linear Power Supply


Original Instructions

# Contents

# Chapter 1 Overview

## 1.1 Introduction

The GPS011 power supplies are low noise, linear supplies designed to minimize electrical interference for maximum system resolution when using our Galvo Scanning Systems. The supplies allow two driver cards to be powered via the separate 2 m power cables supplied with the galvo units. An AC adapter with 1.6m cable enables convenient positioning in any application.

The units are supplied with the input voltage and fuses configured to be compatible in the region to which they are shipped. No further adjustment should be necessary.

# Chapter 2 Safety

## 2.1 Safety Information

For the continuing safety of the operators of this equipment, and the protection of the equipment itself, the operator should take note of the **Warnings, Cautions** and **Notes** throughout this handbook and, where visible, on the product itself.

The following safety symbols may be used throughout the handbook and on the equipment itself.

**Warning: Risk of Electrical Shock**

Given when there is a risk of injury from electrical shock.

**Warning**

Given when there is a risk of injury to users.

**Caution**

Given when there is a risk of damage to the product.

**Note**

Clarification of an instruction or additional information.

**General Warnings**

**Warning**

The safety of any system incorporating this equipment is the responsibility of the person performing the installation.

The unit must be connected only to an earthed (grounded) mains power outlet.

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

No maintenance required. No user servicable parts. If the unit fails, contact technical support.

Disconnect the power supply before cleaning the unit. Never allow water to get inside the case. Do not saturate the unit. Do not use any type of abrasive pad, scouring powder or solvent, e.g. alcohol or benzene

# Chapter 3 Installation and Operation

## 3.1 Environmental Conditions

**Warning**

Operation outside the following environmental limits may adversely affect operator safety.

| | |
|---|---|
| Location | Indoor use only |
| Maximum altitude | 2000 m |
| Temperature range | 5°C to 40°C |
| Maximum Humidity | Less than 80% RH (non-condensing) at 31°C |

To ensure reliable operation the unit should not be exposed to corrosive agents or excessive moisture, heat or dust.

If the unit has been stored at a low temperature or in an environment of high humidity, it must be allowed to reach ambient conditions before being powered up.

The unit must not be used in an explosive environment.

When siting the unit, care must be taken not to restrict access to the power switch on the rear panel.

## 3.2 Connecting The PSU To The Driver Card

**Caution**

Always ensure the power supply unit is isolated from the mains before connecting to the driver cards. Do not connect the driver cards to a 'live' external power supply. Doing so carries the risk of PERMANENT damage to the cards. Always power up the driver cards by connecting the power supply when the mains power is switched off. Similarly, to power down the driver cards, disconnect the power supply from the mains before disconnecting from the cards.

Under some operating conditions (e.g. the maximum current is drawn for prolonged periods), the unit can become quite hot (around 45° C). Always ensure adequate ventillation to the unit. Do not cover the vent holes in the case. Do not place other items on top of or against the unit.

1) The circular 3-pin connector on the power output cable and the OUTPUT socket on the PSU are fitted with alignment keyways to ensure connection in the correct orientation. Check for correct orientation of the alignment keyways, then make connections as shown in Fig. 3.1.

2) Screw the outer casing of the plug clockwise until the connector is fully fastened.

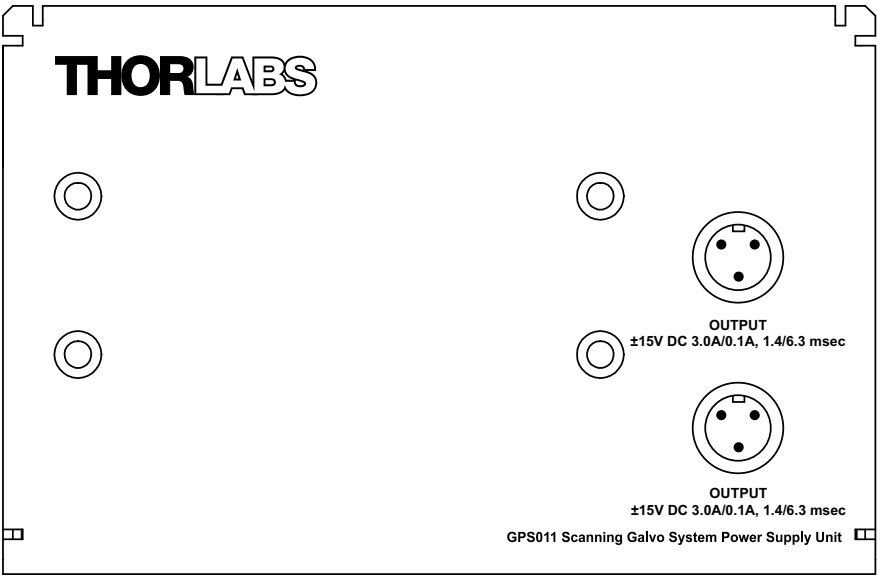



**Fig. 3.1 Connecting the Power Cable to the PSU**

3) Push the 3-way crimp housing on the other end of the cable into the driver card connector J10. Ensure the connector is properly locked in position.

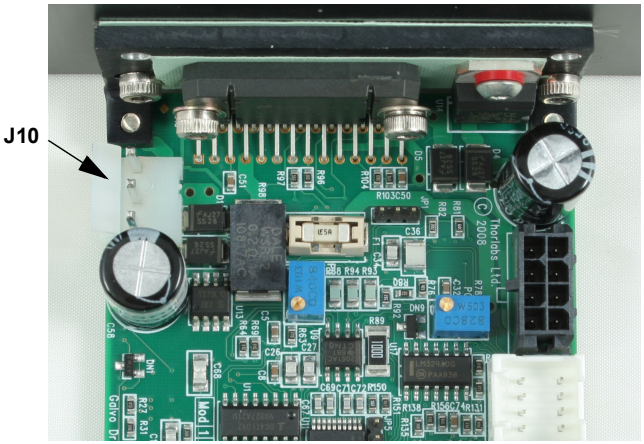



**Fig. 3.2 J10 Connector Identification**

4) Repeat item (3) for the remaining driver card (if used).

## 3.3 Connecting the AC Power

The unit must be connected only to an earthed (grounded) mains power outlet.

**Note**

The unit is supplied with the input voltage and fuses configured to be compatible in the region to which it was shipped. No further adjustment should be necessary.

1) Connect the power cord to the socket on the rear panel of the unit - see Fig. 3.3. and Fig. 3.4.

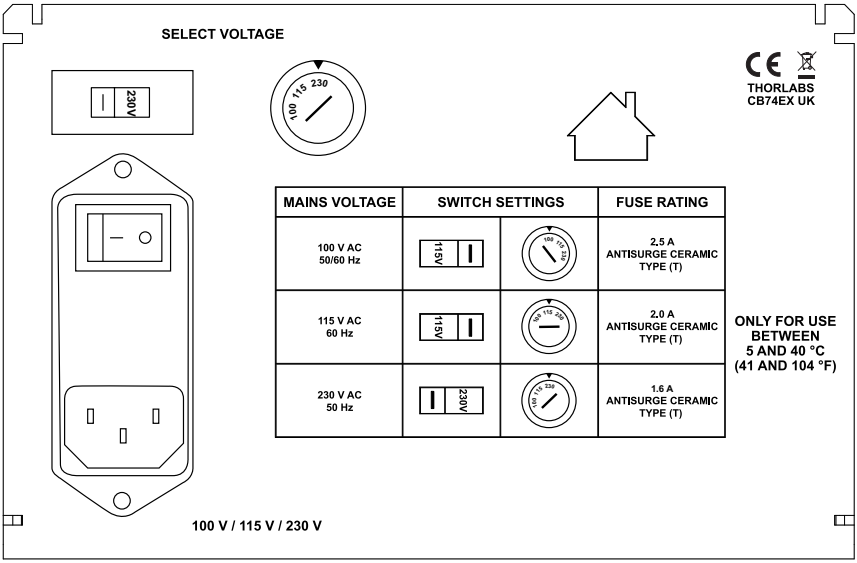



**Fig. 3.3 Rear Panel -EC and -US Models**

2) Ensure that the correct voltage range and fuse rating for your region is selected.

**Caution**

Selecting the incorrect voltage range or fuse will damage the unit. Ensure that both switches are set to the correct position for your region and that the fuse fitted is of the correct rating, as indicated by the screen print on the rear panel.

3) Plug the power cord into the wall socket.

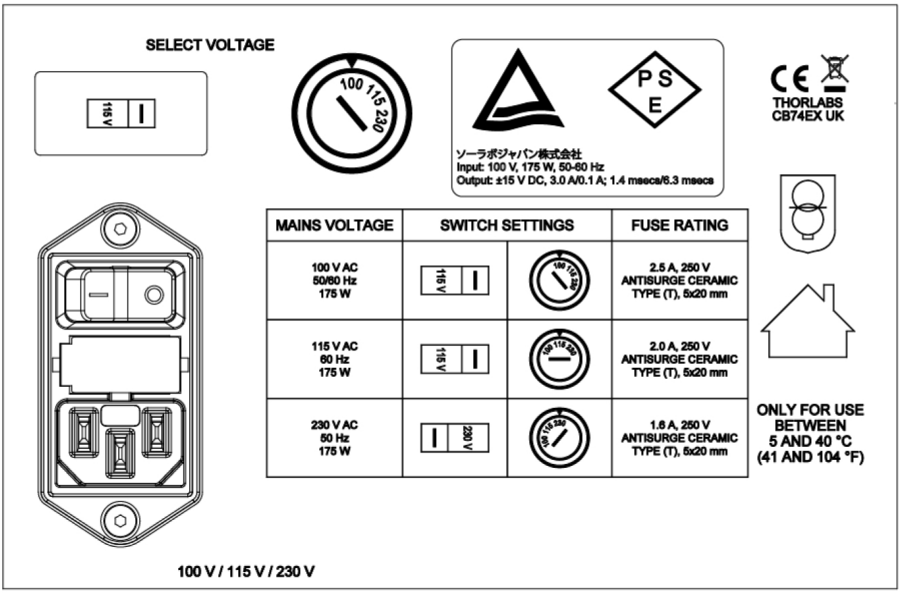
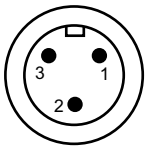



**Fig. 3.4 Rear Panel -JP Models**

## 3.4 Using the Power Supply Unit

1) Make connections and voltage selection settings as detailed in Section 3.2. and Section 3.3.
2) Move the Power switch on the rear panel to the '—' position.
3) To disconnect the power, move the switch to the '0' position.

## 3.5 Power Connector Pin Out




*Viewed from front panel*

Pin 1: +15V
Pin 2: 0V
Pin 3: -15V

**Fig. 3.5 Front Panel POWER OUT Connector Pin Out Details**

# Chapter 4 Specifications

| Parameter | Value |
|---|---|
| Input Voltage Range | Switchable as follows:<br>100V AC 50 or 60 Hz<br>115V AC 60 Hz<br>230 V AC 50 Hz |
| Output Voltage | ±15 V DC 3.0A/0.1A, 1.4/6.3 msec (maximum duty cycle) [a] |
| Fuse Type | Input Voltage Dependent:<br>100 V: T2.5 A Anti-Surge Ceramic<br>115 V: T2.0 A Anti-Surge Ceramic<br>230 V: T1.6 A Anti-Surge Ceramic |
| Housing Dimensions (W x D x H) | 179 mm x 274 mm (max) x 122 mm<br>(7.05" x 10.79" x 4.8") |
| Weight | 4.73 kg (10.4 lbs) |

Notes.

[a] 1.4/6.3 msec is the maximimum duty cycle for drawing max current. This means that if the unit outputs ±15 V at 3.0A for 1.4 msec, it must then output a maximum of 0.1A for 6.3 msec otherwise the unit may get hot with the risk of a potential thermal cutout.

# Chapter 5 Regulatory

## 5.1 Declarations Of Conformity

### 5.1.1 For Customers in Europe

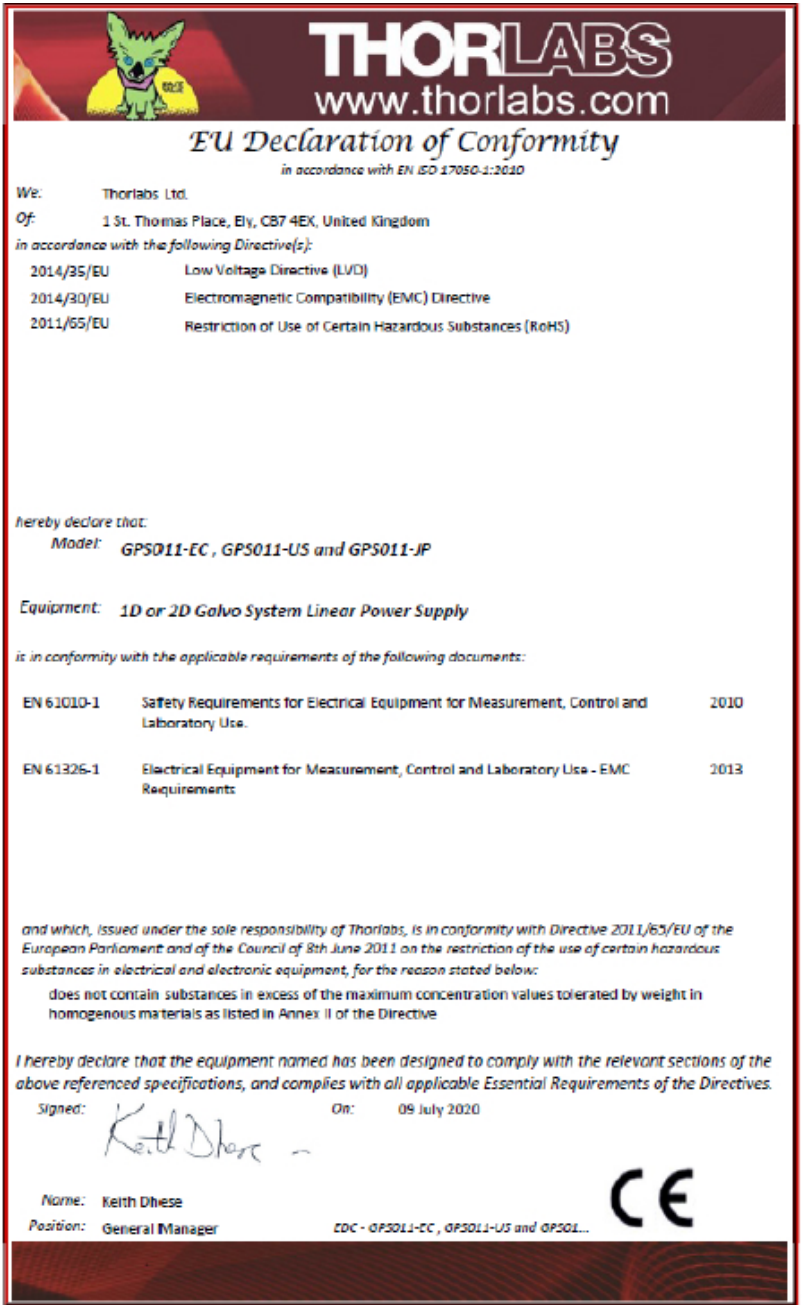
See Section 5.2.

### 5.1.2 For Customers In The USA

This equipment has been tested and found to comply with the limits for a Class A digital device, persuant 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 the instruction manual, 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.

Changes or modifications not expressly approved by the company could void the user's authority to operate the equipment.

## 5.2 CE Certificate



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# EU Declaration of Conformity

*in accordance with EN ISO 17050-1:2010*

*We:* Thorlabs Ltd.

*Of:* 1 St. Thomas Place, Ely, CB7 4EX, United Kingdom

*in accordance with the following Directive(s):*

| | |
|---|---|
| 2014/35/EU | Low Voltage Directive (LVD) |
| 2014/30/EU | Electromagnetic Compatibility (EMC) Directive |
| 2011/65/EU | Restriction of Use of Certain Hazardous Substances (RoHS) |

*hereby declare that:*

*Model:* ***GPS011-EC , GPS011-US and GPS011-JP***

*Equipment:* ***1D or 2D Galvo System Linear Power Supply***

*is in conformity with the applicable requirements of the following documents:*

| | | |
|---|---|---|
| EN 61010-1 | Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use. | 2010 |
| EN 61326-1 | Electrical Equipment for Measurement, Control and Laboratory Use - EMC Requirements | 2013 |

*and which, issued under the sole responsibility of Thorlabs, is in conformity with Directive 2011/65/EU of the European Parliament and of the Council of 8th June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment, for the reason stated below:*

does not contain substances in excess of the maximum concentration values tolerated by weight in homogenous materials as listed in Annex II of the Directive

*I hereby declare that the equipment named has been designed to comply with the relevant sections of the above referenced specifications, and complies with all applicable Essential Requirements of the Directives.*

*Signed:* Keith Dhese *On:* 09 July 2020

*Name:* Keith Dhese

*Position:* General Manager

*EDC - GPS011-EC , GPS011-US and GPS01...*

CE

# Appendix F Thorlabs Worldwide Contacts

For technical support or sales inquiries, please visit us at www.thorlabs.com/contact for our most up-to-date contact information.

**USA, Canada, and South America**
Thorlabs, Inc.
sales@thorlabs.com
techsupport@thorlabs.com

**UK and Ireland**
Thorlabs Ltd.
sales@uk.thorlabs.com
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europe@thorlabs.com

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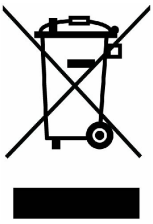
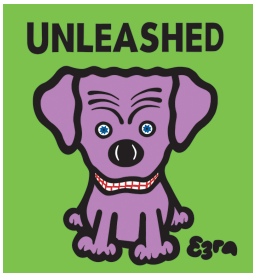
**Japan**
Thorlabs Japan Inc.
sales@thorlabs.jp

**China**
Thorlabs China
chinasales@thorlabs.com

Thorlabs verifies our compliance with the WEEE (Waste Electrical and Electronic Equipment) directive of the European Community and the corresponding national laws. Accordingly, all end users in the EC may return "end of life" Annex I category electrical and electronic equipment sold after August 13, 2005 to Thorlabs, without incurring disposal charges. Eligible units are marked with the crossed out "wheelie bin" logo (see right), were sold to and are currently owned by a company or institute within the EC, and are not dissembled or contaminated. Contact Thorlabs for more information. Waste treatment is your own responsibility. "End of life" units must be returned to Thorlabs or handed to a company specializing in waste recovery. Do not dispose of the unit in a litter bin or at a public waste disposal site.



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