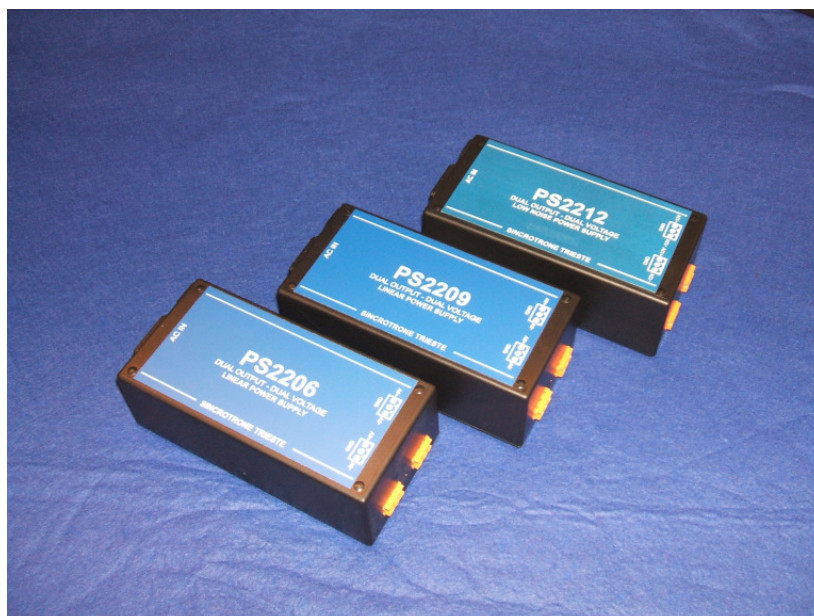

PS22xx

Dual Output – Dual Voltage Linear Power Supplies



User's Manual



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Safety information

Read the instruction manual carefully prior to using the instrument.
The following precautions should be strictly followed before using the PS22xx:

WARNING

- Do not use this product in any manner not specified by the manufacturer. The protective features of this product may be impaired if it is used in a manner not specified in this manual.
- Do not use the device if it is damaged. Inspect carefully the outer case for possible cracks or breaks before each use.
- Do not operate the device if explosive gases, vapors or excessive dust is present.
- Always use the device with its original cables.
- Power off the device before establishing any connection to/from it.
- Do not operate the device for any reason with side covers removed or loosened.
- Do not install substitute parts or perform any unauthorized modification to the product.
- Return the product to the manufacturer for service and repair to ensure that safety features are maintained

CAUTION

- This instrument is designed for indoor use and in area with low condensation.
-

The table below reports the general environmental requirements for the instrument:

Environmental Conditions	Requirements
Operating Temperature	0°C to 40°C
Operating Humidity	20% to 85% RH (non-condensing)
Storage Temperature	-20°C to 70°C
Storage Humidity	5% to 90% RH (non-condensing)

1. Introduction

This chapter describes the general characteristics and main features of the PS22xx linear power supply.

1.1 The PS22xx Linear Power Supplies

Sincrotrone Trieste's PS22xx is a dual-output, dual-voltage linear power supplies product line. Every power supply is designed to obtain low noise operation and it is especially suited for low power measurement systems where switching power supplies could corrupt measure accuracy and precision.

All the PS22xx power supplies are housed in a light, robust and extremely compact plastic box that can be placed as close as possible to the supplied device in order to reduce cable lengths and minimize consequent possible noise pick-up.

These power supplies are designed for operation with the Sincrotrone Trieste's AH401, AH401B and AH501 picoammeter series, where a low noise voltage power supply is necessary to guarantee specifications.

1.2 The PS22xx at a Glance

The PS22xx and its I/Os are represented in Fig. 1 (i.e. PS2209):



Fig. 1 – AC Line Input Connector

The PS22xx are isolated linear bipolar power supplies with two independent output connectors that allow users to supply two different devices at a time; these two output connectors are functionally equivalent.

The plastic enclosure is provided with four connectors and one LED indicator. The AC Power Line input (115/230V) and the AC Line Voltage select switch are placed on one side of the box (the left side in Fig. 1) while the output connectors and the LED on the other one.

The PS22xx series presents five different models that differ in output voltage rating, as illustrated in the following table:

	Negative Output Voltage	Positive Output Voltage
PS2205	-5V	+5V
PS2206	-6V	+6V
PS2209	-9V	+9V
PS2212	-12V	+12V
PS2215	-15V	+15V

Output Voltage Values for PS22xx models

1.3 Technical Data

The PS22xx series have an output voltage accuracy of $\pm 4\%$ over all different models.

Typical RMS noise voltage at the device output terminals is rated at 5 ppm of the nominal output voltage value. This value is measured over a 1MHz bandwidth using a LeCroy WaveRunner 104Xi with AC Coupling and no load (except for the internal LED). A typical output waveform used to estimate the Root-Mean-Square (RMS) noise value is shown in Figure 2.

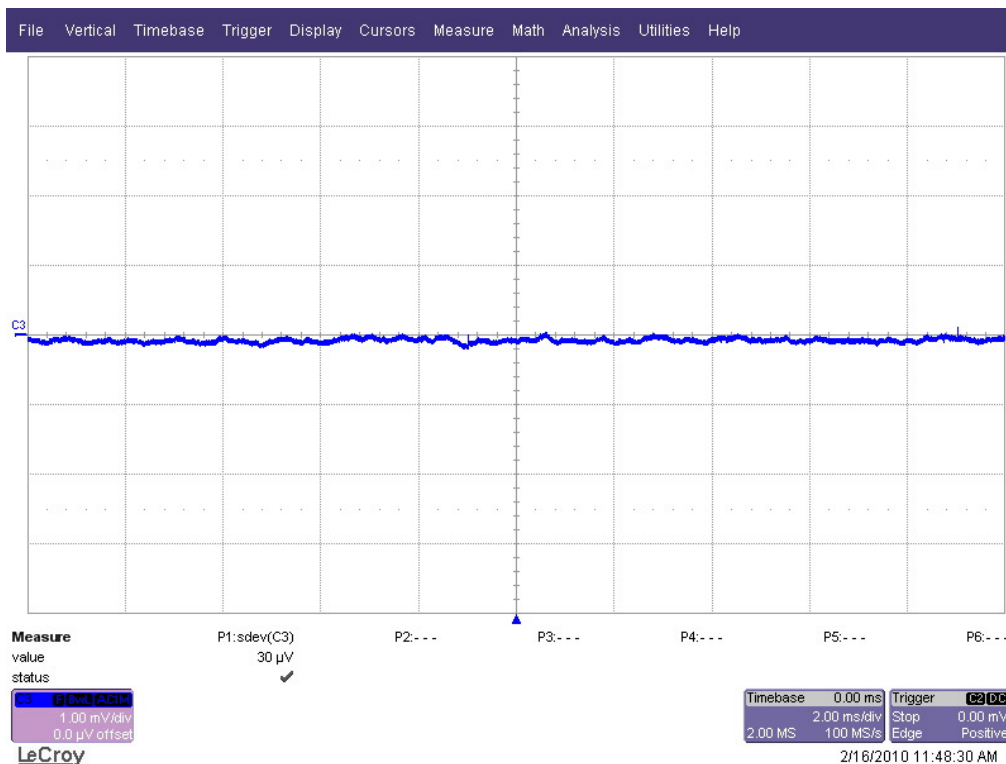


Fig. 2 – Typical output noise (AC coupling)

2. I/O Connectors

This chapter describes the I/O connectors, their corresponding pinout and functionality.

2.1 AC Line Input Connector

The AC Line Input connector is in a standard VDE format and it is provided with a fuse for over-current (i.e. short-circuit) protection.

The PS22xx power supplies are designed for 115/230V and for 50-60 Hz operation: the AC input voltage rating **MUST** be selected by the user using the AC Line Voltage Select switch placed next to the VDE plug (i.e. on the left side) before connecting the power supply to the mains. The fuse is housed under the VDE plug as indicated in Fig. 3:

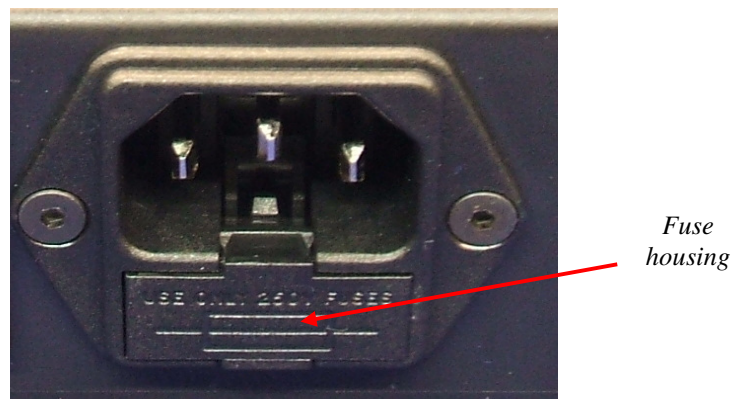


Fig. 3 – AC Line Input Connector

2.2 AC Line Voltage Select Switch

All models of the PS22xx series can be used either with a 115V – 60Hz AC power line (i.e. United States) or with a 230 V – 50 Hz AC Line (i.e. Europe); be sure to select the correct input voltage rating by switching the AC Line Voltage Select switch placed on one side of the box, as indicated in Fig. 4.



Fig. 6 – Rear view of a PS2209 module

Possible switch positions, one for each input voltage rating, are shown in Fig. 4A and Fig. 4B:



Fig. 5A – AC Line Voltage Select switch position for 230V operation



Fig. 5B – AC Line Voltage Select switch position for 115V operation

2.3 Output Connectors

One of the power supply output connectors and the corresponding pinout are shown in Fig. 6. The output voltage range goes from $\pm 5V$ up to $\pm 15V$ depending on the selected model.

The connector type is a WEIDMULLER – “SL 5.08/3/90B 3.2SN” series; the corresponding matching connector plug is a – “BLZ 5.08/3 SN” series.

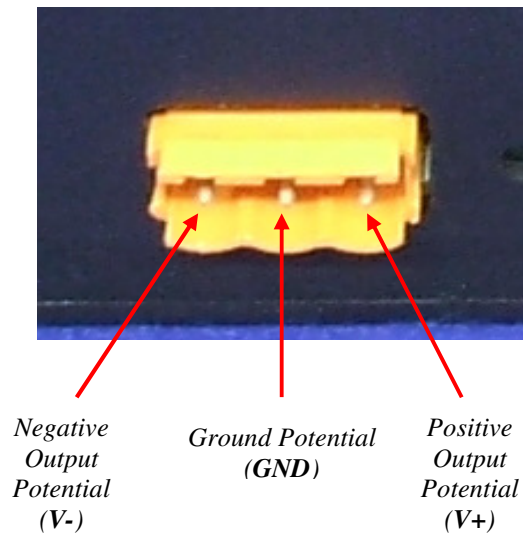


Fig. 6 – Output connector

3. Technical Specifications

Output Voltage	±5V, ±6V, ±9V, ±12V, ±15V
Output Current	500mA
Output RMS Noise (typical)	5 ppm (BW=1MHz)
AC Line Voltage Input	115V / 230V
AC Line Frequency Range	50-60Hz
Output Connectors	2
Dimensions	155 × 80 × 52 mm
Weight	< 800g