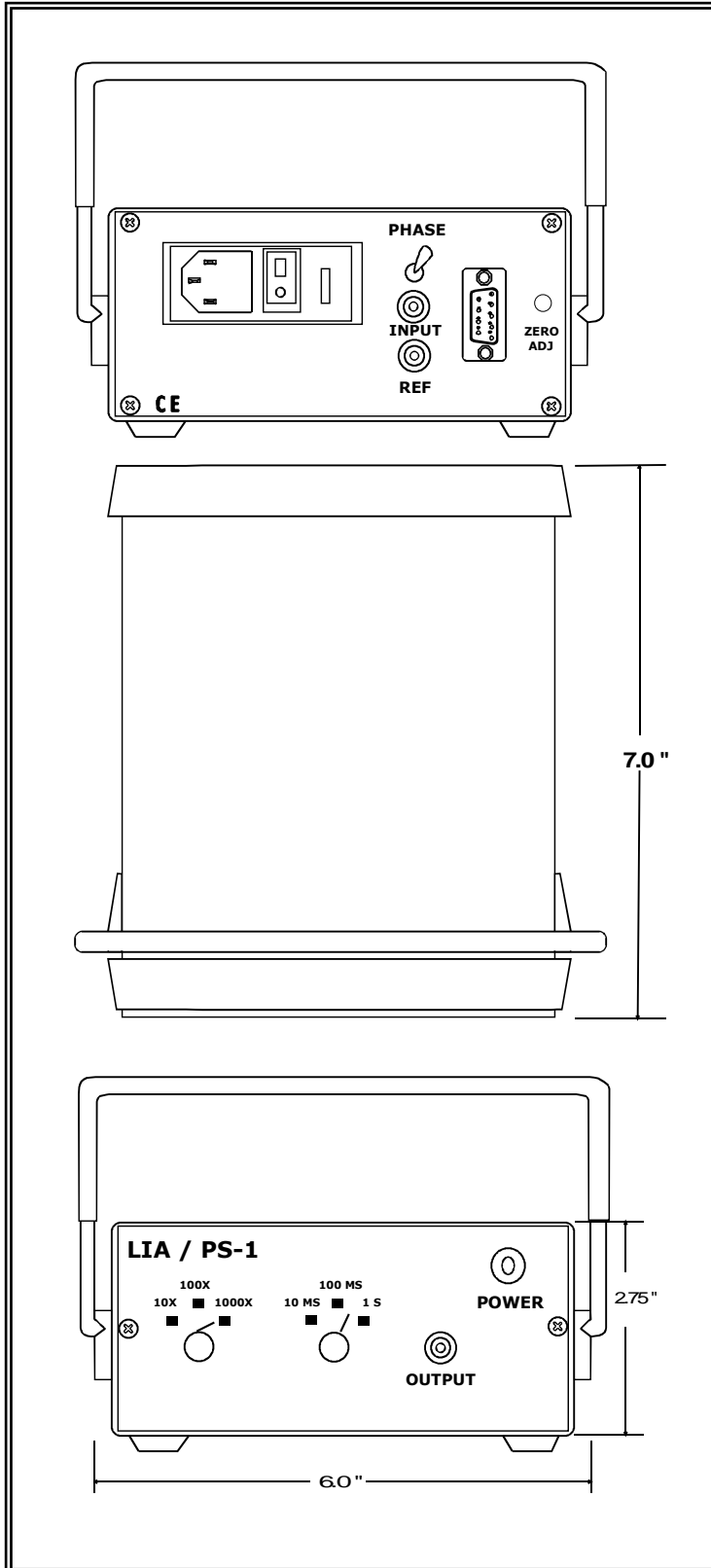
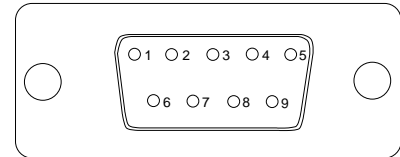


LIA/PS-1 LOCK-IN AMPLIFIER/POWER SUPPLY



The LIA / PS-1 is a combination lock-in amplifier and low noise power supply for powering all Electro - Optical Systems' receivers and interfacing to the receiver preamplifiers. In addition, the PS-1 works well as a general purpose, dual - polarity laboratory power supply.



DB-9 PIN OUT

1	NO CONNECT	6	+V
2	NO CONNECT	7	-V
3	NO CONNECT	8	GND
4	NO CONNECT	9	CASE GND
5	NO CONNECT		

SPECIFICATIONS

POWER SUPPLY

Output Voltage	± 15 V
Output Current	± 100 mA
Regulation	0.02 % line & load
Ripple	0.5 mV RMS max output
Connections	One 9-pin Dee-Plug Connector
Input Power	110/120 VAC/0.5 A & 220/240 VAC/0.5A

LOCK - IN AMPLIFIER

Sensitivity	10 μ V (for 1 volt output)
Dynamic Range	0 - 60 db
Input Noise	8 nv @ 500 Hz
Gain Adj	10 - 1000
Gain Stability	100 ppm / C
Time Constant	10 ms - 1 s
Max Inputs Range	+/- 10 V
Input Impedance	10K ohms @ 500 Hz
Reference Input	TTL / sinusoidal
Phase Select	0 / 180
Phase Drift	0.1 / $^{\circ}$ C
Power	+/- 15 VDC
Enclosure	6" x 7" x 2.75"
Temperature Range	0 - 70 $^{\circ}$ C



OPERATING THE LIA/PS-1

INTRODUCTION

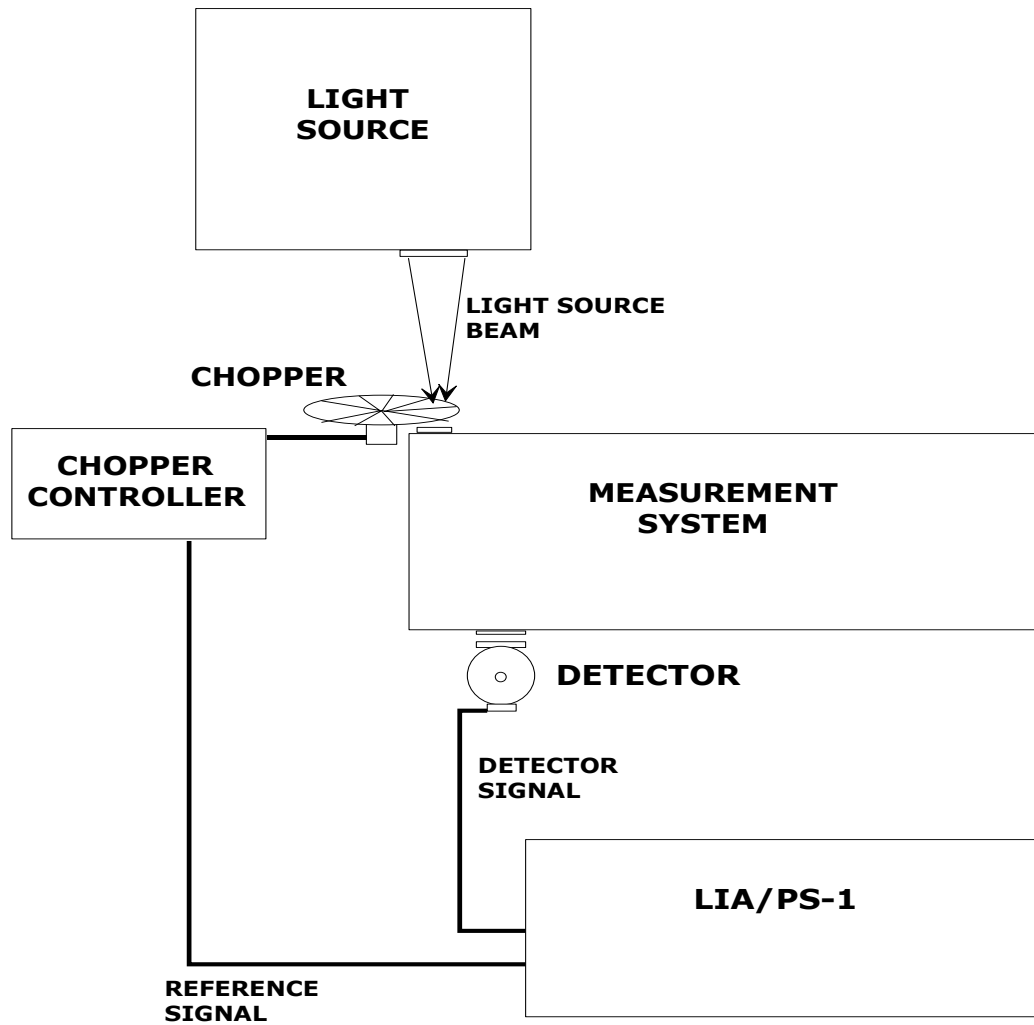
The LIA/PS-1 is a dedicated purpose lock-in amplifier system that provides a cost-effective, high performance instrumentation solution to synchronous detection applications. A low-noise bipolar power supply is included to power detector/amplifier modules. A typical application set-up is shown on Page 3.

ORGANIZATION/OPERATION

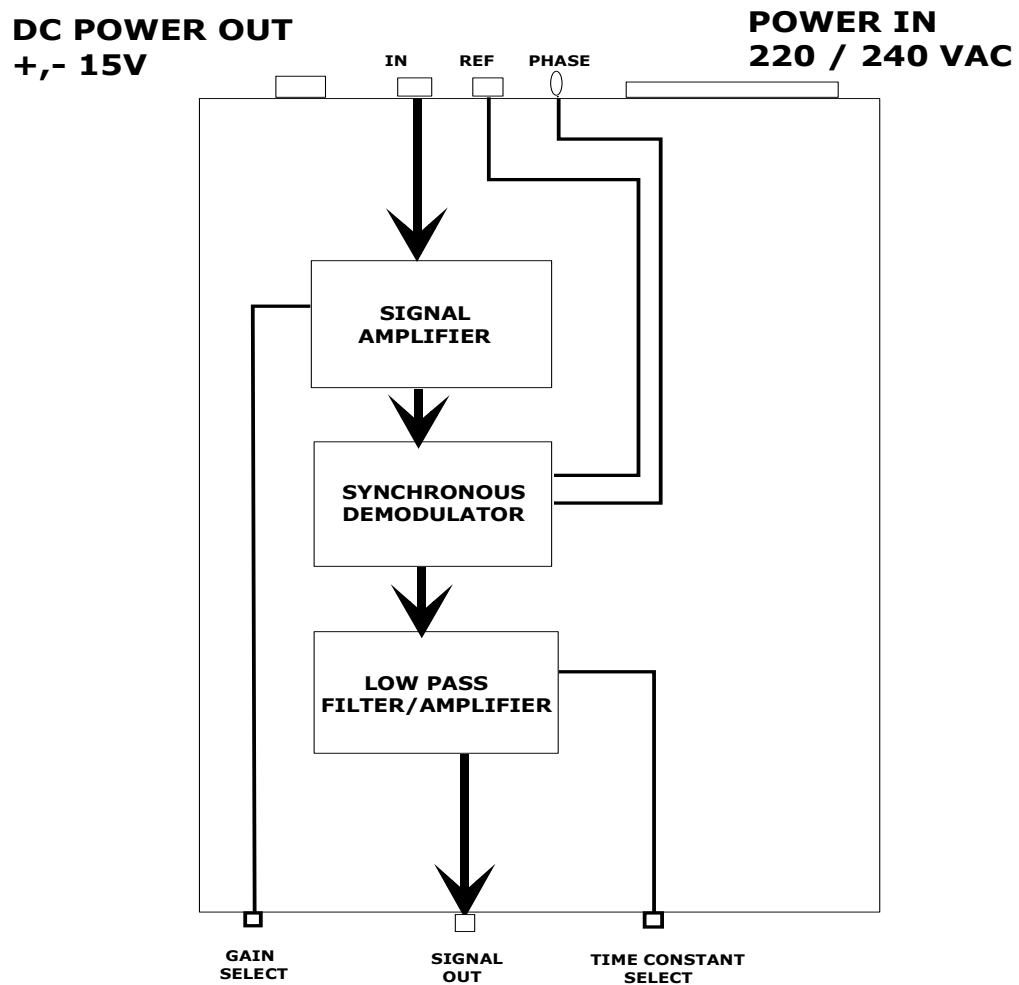
The organization of the LIA is shown on Page 4.

- Input power: AC power entry module with changeable settings for either 115 VAC (110-120) or 230 VAC (220-240).
- Output power: 9-pin D-connector for +, - 15 VDC to operate detector modules.
- Signal Input: The top BNC connector on the rear panel feeds a conditioning amplifier with a front panel gain selection switch for x10, x100, and x1000, providing for a wide range of signal levels.
- Reference Input: The bottom BNC connector on the rear panel for the incoming frequency reference signal from the chopper or other modulation controller accepts TTL or sine wave. This signal feeds the synchronous demodulator.
- Phase: A rear panel switch allows for 0 or 180 degree phase selection. No other phase adjustment is provided. User must insure proper phase matching of the reference signal.
- Signal Output: The demodulator output goes through a filter/amplifier stage to a front panel BNC for connection to user's data analysis equipment. A front panel switch sets the filter bandwidth to give an overall time constant of 10ms, 100ms or 1 second. The time constant setting determines the equivalent-noise-bandwidth (ENBW) unless the user has installed prefiltering on the signal channel. The LIA-1 filtering sets the ENBW at $1/(4TC)$.
- Offset Adjust: A screw pot on the rear panel is used for adjusting the DC offset.

TYPICAL APPLICATION SET-UP



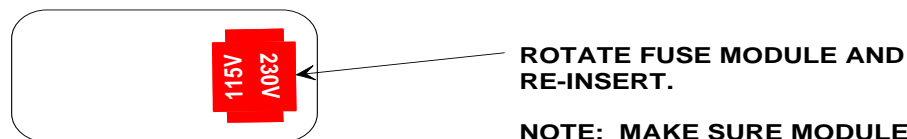
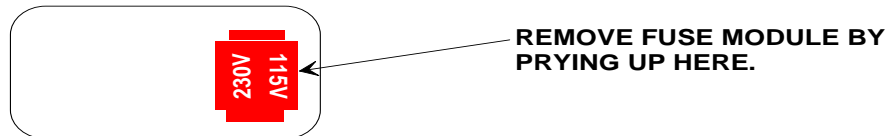
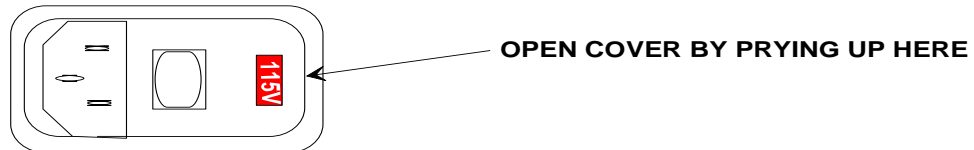
LIA ORGANIZATION



LIA/PS-1 LOCK-IN AMPLIFIER/POWER SUPPLY

The EOS power supplies are CE-marked units that can be operated on either 115VAC or 230VAC by a simple conversion of the power entry module as described below:

POWER MODULE



NOTE: MAKE SURE MODULE IS PUSHED FIRMLY DOWN AND CLICKS IN PLACE. OTHERWISE THE FUSES WILL NOT MAKE CONTACT.

