



P-SOLO

*SINGLE-CHANNEL PRECISION MICROPHONE PREAMPLIFIER
with Direct Instrument Input*

OPERATION MANUAL

Version 1.3

IMPORTANT SAFETY INSTRUCTIONS



Important Symbols:

This symbol indicates the presence of dangerous voltage within the product enclosure that presents the risk of electric shock injury. When this symbol appears next to an operation discussed in this manual, only qualified technical personnel should perform that operation.



This symbol indicates important operating or maintenance instructions that should be read carefully. Failure to observe these instructions could result in damage to the product or other property. Resulting damage will not be covered under warranty.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Clean only with dry cloth.
6. Install this unit in accordance with manufacturer's instructions.
7. Only use attachments/accessories approved by the manufacturer.
8. Do not use this unit near water.
9. Do not place liquid-filled objects on this unit.
10. Do not operate this unit in the presence of rain, dripping or splashing liquids, or condensing moisture. Liquid entering the product enclosure presents the risk of electric shock injury.
11. Do not touch the AC plug or enclosure with wet hands.
12. Do not install near heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
13. Unplug this unit during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the unit has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the unit, the unit has been exposed to rain or moisture, does not operate normally, or has been dropped.



To reduce the risk of electric shock injury, do not remove the top cover or rear panel.

- Do not defeat the earth ground connection in the AC power cord.
- Do not defeat intended AC power connection polarization.
- Do not use a damaged or excessively worn cord to connect this unit to AC power. Protect power cord from being walked on or pinched.

CAUTION: To disconnect this unit completely from the MAINS, unplug the unit. Turning the power switch off does not disconnect the unit completely from the MAINS.



Severe damage may result if the AC voltage setting is not correct for the AC power available in your area.

- See section on "AC Mains Connection" for instructions on selecting the proper AC voltage setting. Product failure caused by improper voltage setting cannot be covered under warranty.
- Liquid entering the product enclosure is likely to cause performance degradation or failure. Failures due to moisture entering the enclosure cannot be covered under warranty.
- This product is designed to operate in an ambient temperature environment not to exceed 50°C (122°F). Please ensure that this unit is mounted in such a way that sides and rear of unit have minimum ¾" (19mm) clearance, and ambient temperature does not exceed 50°C.

CERTIFICATIONS

Declaration of Conformity – CE

Sunrise Engineering and Design Inc. hereby declares the **TRUE Systems P-SOLO** single-channel microphone preamplifier to be in material conformity with the following directives and related standards:

- 73/23/EEC – Low Voltage Directive
- 89/336/EEC – EMC Directive

Technical files are maintained at corporate headquarters of Sunrise Engineering and Design Inc., 1630 S. Research Loop, Suite 150, Tucson, Arizona 85710, USA.

Owner's Record

We recommend that you record the following information for reference in the event that you need to contact **TRUE Systems** for technical support or repairs. Please return your completed Warranty Card today.

Serial No. _____ Purchase Date _____

Dealer _____

Address _____

Phone _____

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INTRODUCTION

The **P-SOLO** is designed to provide the detailed, transparent sonic performance necessary for the most critical recording and live sound applications. It's unique desktop enclosure saves space and makes it easy to transport and connect to any recording or live sound system.

We appreciate the confidence you have placed in **TRUE Systems** by purchasing this product. Please feel free to contact us with questions or comments.

OVERVIEW

In addition to our acclaimed **TRUE** preamp, **P-SOLO** features an instrument direct input (DI) that offers sonic performance previously available only with dedicated, high-end DI's. You'll get incredible articulation and control for electric bass, detail and smoothness for stringed instruments and keyboards.

In addition to the previously mentioned features, the **P-SOLO** includes:

- Low-Gain Mode - to accommodate high-dynamics signal sources
- Selectable High-Pass Filter - to minimize breath and wind noise
- XLR and TRS output connectors - for easy connectivity
- Phantom Power (48V)

UP-AND-RUNNING IN A HURRY

1. Read the "**IMPORTANT SAFETY INSTRUCTIONS**" on page 2 of this manual.
2. Check the voltage selector on the rear panel to make sure it is set for the appropriate AC mains voltage in your area.
3. After making sure the main power switch is off, connect the AC power cord.
4. Connect output signal cables between **P-SOLO BALANCED OUT** and the analog line level input of your recorder, mixer, signal processor, etc. Use either the 1/4" TRS or XLR balanced output connectors. See the section "Connections" for wiring details.
5. Connect a mic cable (and mic) to **MIC IN** connector on the rear panel.
6. Turn on the AC power.
7. Select 48V as appropriate for the microphone you are using.
8. Adjust GAIN control for adequate signal level as indicated on the **P-SOLO** level indicators or on the level indicators of the device to which it is connected.

If you're using the DI for electric instrument input:

1. Connect your instrument cables to the **INSTRUMENT** (DI) connector on the front panel. Any microphones plugged into **MIC IN** will be automatically de-selected
NOTE: DO NOT use TRS plugs for these inputs, as the DI will not function correctly.
2. Adjust GAIN control for adequate signal level as indicated on the **P-SOLO** level indicators or on the level indicators of the device to which it is connected.

INSTALLATION

Unpacking and Inspection

We recommend that you inspect your **P-SOLO** upon unpacking it from the factory shipping carton. In the unlikely event that the unit exhibits any physical damage, DO NOT connect it to the AC mains power, but contact your dealer immediately.

In addition to the **P-SOLO**, the shipping carton should also include:

- An AC power cord
- A warranty registration card
- This Operation Manual

We recommend that you keep the shipping carton and foam inserts in the event that the unit must be shipped at some time in the future. DO NOT package the unit in “packing peanuts” or similar material as it will settle during shipping and damage may occur. If original packing materials cannot be located, wrap the unit with plastic “bubble wrap” material extending at least 2” beyond the extremities of the **P-SOLO** enclosure.

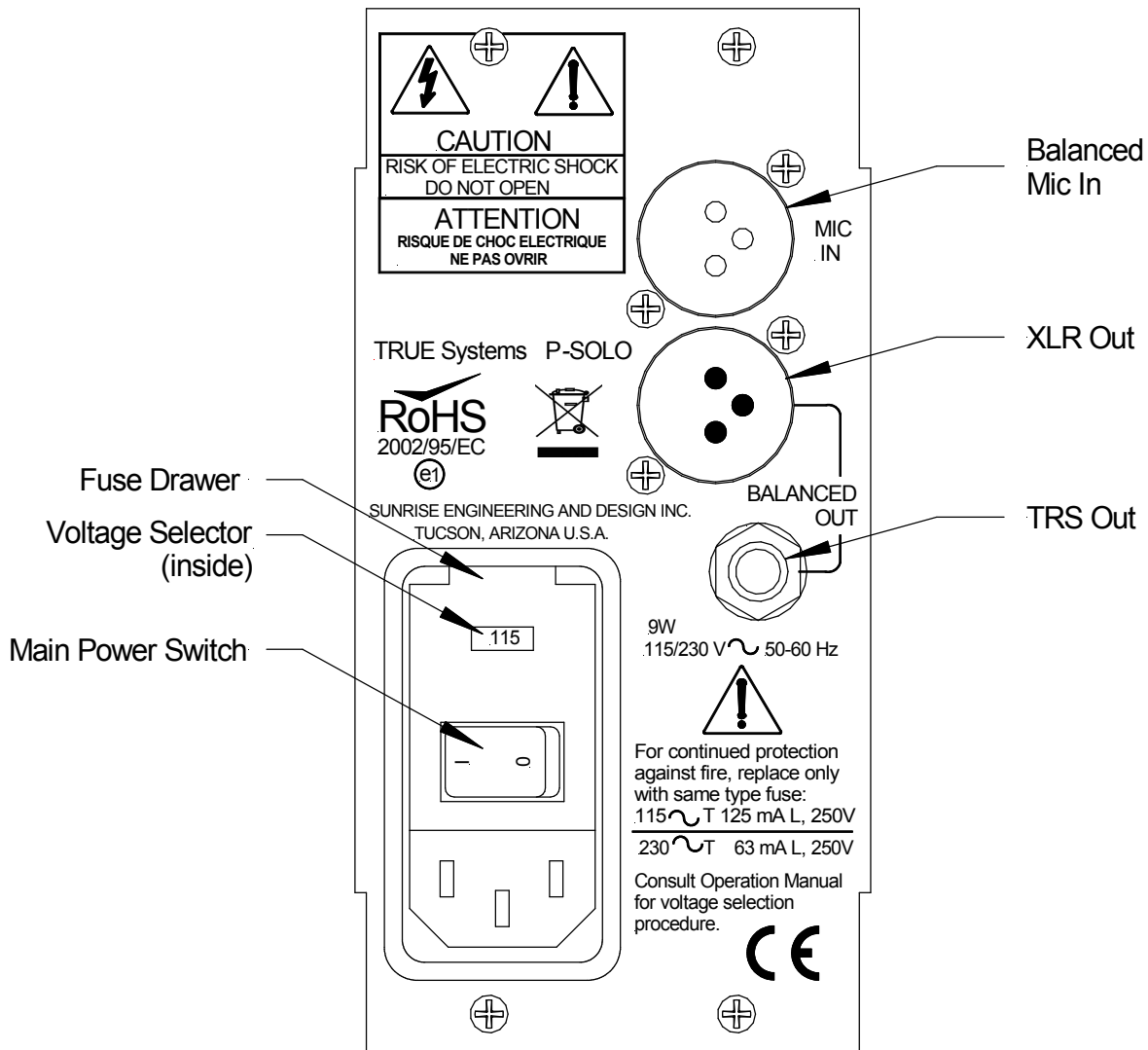
Mounting

The **P-SOLO** is designed for placement on your desktop, or any convenient flat surface. It’s light weight and compact enclosure make it easy to carry by hand or in your gig bag. If you wish to rack mount the unit, please visit our website (www.true-systems.com) for recommended accessories and mounting procedure.

- Do not locate the unit where it is exposed to rain, moisture, or liquid spills.
- Do not locate the unit where it is exposed to temperature extremes.
- Avoid locating the unit next to equipment that emits strong electromagnetic fields.
- Avoid using mic, output, or instrument cables that are too short. While the **P-SOLO** is quite stable for its size and shape, stepping or pulling on a short, taught cable may move it out of place, possibly causing damage.

OPERATION

Connections



AC Mains Connection: Prior to connecting the AC mains power cord, verify that the Voltage Selector (inside the fuse drawer) is set for the AC mains voltage in your area.

Voltage Selector Position	Operating Voltage Range	Fuses (2)
115V	100-132VAC 50/60Hz	T 125mA L, 250V
230V	200-264VAC 50/60Hz	T 63mA L, 250V



CAUTION: To provide continued protection against fire, replacement fuses should be only of the types listed above. AC mains power cord must be removed to open Fuse Drawer for fuse replacement.

Microphone Connection: Microphone connection is made to an XLR **MIC IN** receptacle on the rear panel. The wiring configuration used for the microphone connectors on the **P-SOLO** is:

- Pin 2 is positive (+)
- Pin 3 is negative (-)
- Pin 1 is shield

Do not attempt to connect unbalanced microphones to the **P-SOLO**. It is not intended to operate with this type of microphone.



CAUTION: We recommend that you avoid “hot-patching” the microphone input if using a patch bay at the microphone input of the **P-SOLO**. Please **TURN OFF** phantom power and turn down the gain prior to connecting or re-patching a microphone input routed through a patch bay. Failure to do so may result in transients that can damage the **P-SOLO** or equipment that is connected to its outputs-not to mention your ears!

Output Cable Connection: For ease of connection, two styles of **BALANCED OUT** connector, XLR and TRS, are provided. Both connector types are electrically equivalent and may be used simultaneously to connect to Line Inputs on mixing consoles, recorders, etc. If both outputs are used, care should be taken to avoid system ground loops. See “Troubleshooting” section for tips on eliminating hum caused by grounding problems.

The TRS and XLR output connectors are not electronically isolated. Therefore, if you connect either one of the output connectors to an unbalanced input, the other connector will automatically be unbalanced. When connecting an output of the **P-SOLO** to an unbalanced input, you **must** connect the negative signal pin (pin 3 of the XLR or “ring” of the TRS) to the shield. Failure to do this will result in audible distortion. The wiring configuration used for the output connectors on the **P-SOLO** is:

For XLR:

- Pin 2 is positive (+)
- Pin 3 is negative (-)
- Pin 1 is shield

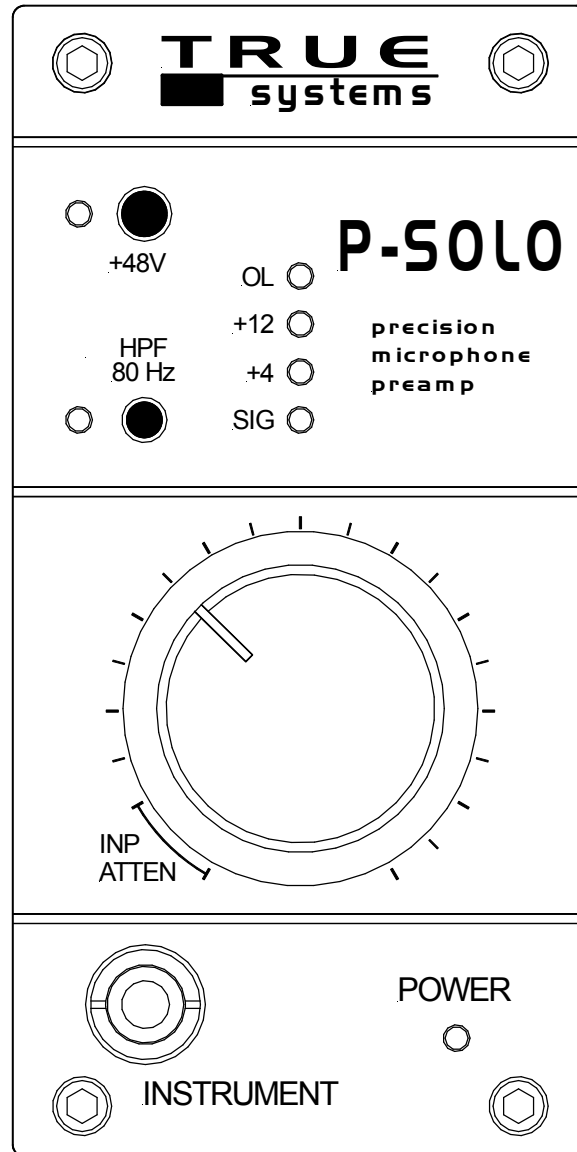
For TRS:

- Tip is positive (+)
- Ring is negative (-)
- Sleeve is shield

A Word About Cables.....

Use high-quality, low capacitance cable. Braided shielding and “star quad” type cables will perform better in electrically noisy environments. Canare®, Mogami® (and others) make high performance cable of this type. Some “house brand” cables are made by quality manufacturers, but others can be inferior - be careful. Use cables with high-quality connectors (Neutrik®, Switchcraft®, etc.). Avoid excessive cable length. Replace damaged connectors.

Front Panel Controls



GAIN Control (big knob) is used to set the appropriate gain range. Normal microphone gain range is 15.5dB to 64dB. For very hot signal sources, the GAIN Control can be set to the **INP ATTEN** mode. The GAIN Control will “click” into this position as the knob is turned fully counterclockwise. In the **INP ATTEN** mode, the **P-SOLO** is set to a fixed gain of about 6dB. The **INP ATTEN** mode affects both mic and instrument inputs.

+48V Phantom Power selector. Phantom power (+48VDC) is activated when the **+48V** indicator is illuminated. Avoid selecting phantom power if you are using a ribbon microphone. While not required, it is advisable to de-select **+48V** when using a dynamic microphone or the **INSTRUMENT** input.

HPF High Pass Filter selector. Use this to reduce undesirable low frequency background noise. The 80Hz setting is appropriate for many musical and voice applications. Note that use of the **HPF** will most likely not eliminate the need for a pop screen for close-mic'd vocal use.

The **INSTRUMENT** input (DI) is used for connection of electric instrument pickup or synthesizers. The DI we've designed for the **P-SOLO** matches (or exceeds) the sonic performance of acclaimed, dedicated DI products. It provides excellent articulation and control for electric/acoustic bass, detail and smoothness for stringed instruments and keyboards. A microphone plugged into **MIC IN** will be automatically de-selected when an instrument is connected to the **INSTRUMENT** input. Settings for **GAIN** and **HPF** apply to the DI input in the same manner as they apply to mic input. The gain range for the direct inputs is from -4 dB to +44 dB at normal gain and -14 dB in the **INP ATTEN** mode.

NOTE: The **INSTRUMENT** input is for unbalanced sources only. DO NOT use a TRS (balanced) plug for this input, as the DI will not function correctly.

Level Indicators. Use these to match signal level between the **P-SOLO** and devices to which it is connected - and to avoid overloading the preamp.

- **SIG** indicates that a signal is present on the channel. It illuminates when the signal level exceeds -24dBu.
- **+4** illuminates when the signal reaches normal operating level of +4 dBu.
- **OL** illuminates when the signal level exceeds +26 dBu, which is 5 dB below the overload point for the **P-SOLO** *.
- .Note that the overload level of the **P-SOLO** is +31dBu at the output*. This level exceeds the input capability of some devices (check manufacturer's specifications). In such cases it is appropriate to use the intermediate level indicators (**+4**, **+12**) to set the maximum output level of the **P-SOLO** to match the maximum input capability of the connected device. In other words, it is possible to cause overload distortion in the connected device even though the **P-SOLO** level indicator does not show a red light. * Maximum output level in the **INP ATTEN** mode is +27dBu.

DESIGN APPROACH

P-SOLO features a high-voltage composite architecture with discrete devices plus integrated circuits. The totally balanced, dual servo, dc-coupled design provides exceptional transient response, headroom, imaging and noise performance. Military grade, hand-matched components are utilized in critical circuit areas. These design features result in the transparent, detailed sound quality for which **TRUE** preamps have become known.

SPECIFICATIONS

Gain, preamp:	15.5 to 64dB or 6dB (INP ATTEN mode)
DI:	-4 to 44dB or -14dB (INP ATTEN mode)
Frequency Response: (gain=40dB)	1.5 Hz to 500kHz (-3dB)
Maximum Output Level:	+31 dBu (+27 dBu in INP ATTEN mode)
Maximum Input Level:	+15 dBu (+25 dBu in INP ATTEN mode)
Noise (Rs=0 Ohms):	-132 dB e.i.n.
Slew Rate:	>40 V/uS
CMRR (CMV= +10 dBu):	85 dB
THD (preamp) (+26dBu, 100kOhm)	.0008%
Input Impedance, preamp:	5.5 Kohm
DI:	2.5 Mohm
Power Consumption:	115/230 VAC, 50-60Hz, 9W
Enclosure Dimensions:	3.0 in. (7.6 cm) W 6.5 in. (16.5 cm) D 6.0 in. (15.2 cm) H
Front Panel Extension:	0.6 in. (1.5 cm)
Weight:	2.5 lbs. (1.1 kg)

Typical performance. Specifications subject to change without notice.

TROUBLESHOOTING

Symptom	Solution
No signal output. Main power switch is on, but no LED's are illuminated.	<ul style="list-style-type: none"> • Check AC power source and cord. • Check fuses (open fuse drawer, remove fuse holder, inspect fuses)
No signal output. Main power switch is on and some LED's are illuminated.	<ul style="list-style-type: none"> • Check status of phantom power. • Check continuity of mic and electric instrument cables. • Check continuity of output cables.
Output signal is distorted. Outputs are connected for balanced operation .	<ul style="list-style-type: none"> • Make sure gain is adjusted so that the OL indicator does not activate during the audio program. • Make sure the high output capability of this unit is not overloading the device or monitoring system to which it is connected - Check continuity of output cable. • Make sure outputs are not connected to a load impedance of less than 600 ohms.
Output signal is distorted. Outputs are connected for unbalanced operation .	<ul style="list-style-type: none"> • Make sure the minus (-) output signal pins are connected to the shield and not left unconnected. See "Output Cable Connection" section. • Check troubleshooting tips for balanced operation (above).
Hum can be heard in the audio program.	<ul style="list-style-type: none"> • Check continuity of output cables (particularly shields). • Disconnect shields on one end of output cables. (Not appropriate for unbalanced connections.)
Electric instrument connected to the Instrument input does not produce a signal or signal is distorted.	<ul style="list-style-type: none"> • Check continuity of electric instrument cables. • Check the batteries or AC power source of any "foot pedal" effects processors connected to the Instrument input. • Make sure that the instrument cables have standard tip-sleeve 1/4" phone plugs. - DO NOT use TRS plugs.

REGISTRATION and WARRANTY

Don't forget to register your **P-SOLO** by filling out the enclosed Registration Card and returning it to us. This allows **TRUE Systems** to contact you regarding any updates, upgrades or applications information that may become available.

SUNRISE ENGINEERING and DESIGN INC. ("SUNRISE") warrants the **TRUE systems P-SOLO** to be free from defects in material and manufacture, when properly installed and used according to instructions in the Operation Manual, for a period of one year from the date of sale to the original purchaser. Units returned for warranty repair to SUNRISE or an authorized **TRUE Systems** repair facility will be repaired or replaced at the manufacturer's option, free of charge. Supplementary shipping charges will apply to units returned to addresses outside the continental USA. All units returned to SUNRISE or authorized **TRUE systems** repair facility must be prepaid, insured and properly packaged. Purchaser must obtain a Return Material Authorization (RMA) number from SUNRISE prior to returning a product. SUNRISE may require proof of the purchase date in the form of a copy of a dated original retail invoice.

This warranty is void if, in the sole judgment of SUNRISE, the product has been abused, neglected, misapplied, or has been damaged by an accident, modification, or attempted repair by unauthorized personnel. This warranty will not apply to cosmetic damage incurred due to normal handling and use. SUNRISE reserves the right to change or improve the product design at any time without prior notice. Incorporation of design changes in future versions of the product does not imply the availability of upgrades for existing units.

This warranty is in lieu of all other warranties, expressed or implied, and SUNRISE specifically disclaims all implied warranties, including, but not limited to, warranties of merchantability and fitness for a particular purpose. The purchaser acknowledges and agrees that in no event shall SUNRISE be held liable for any special, indirect, incidental or consequential damage, or for injury, loss or damage sustained by any person or property, that may result from the use of, or failure of this product to operate correctly at any time. In the USA, some states do not allow the exclusion or limitation of implied warranties or liability for incidental or consequential damage, so the previous exclusion may not apply to you. This warranty gives you specific legal rights, and you may have other rights that vary from state to state.

SERVICE and SUPPORT INFORMATION

- Registered users may obtain customer support by calling (520) 721-2735. Please ask for Tech Support. You may also visit our website: www.true-systems.com or email us at: techsupport@true-systems.com.
- Other than cleaning the exterior surfaces of your **P-SOLO** and occasional inspection of the AC power cord and audio cables for damage, no maintenance procedures should be attempted by the user. Exterior cleaning can be performed using a lint-free cloth dampened with Windex® or equivalent.



There are no user-serviceable components inside the product enclosure. Many of the electronic components are selected and matched at the factory. For this reason, as well as personal safety considerations, we recommend that you refer servicing to **TRUE Systems**. If you choose to have repairs performed by other qualified service personnel, we recommend they contact us prior to performing repairs. We will be happy to advise them of any special repair considerations.

All units returned to SUNRISE or authorized **TRUE systems** repair facility must be **prepaid, insured and properly packaged**. Purchaser must obtain a Return Material Authorization (RMA) number prior to returning a product.

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