

【VER.: 2020】



CATV POWER SUPPLY

Technical Manual

PS SERIES

2.5 AC Input Connection (continued)

2.5.2 Input Voltage Reconfiguration

Models, which feature field-selectable input voltages, are equipped with a switch beneath the terminal block for input voltage connection. This switch is given for input voltage selection. Rated input voltages are printed on each side of the switch, as well as input frequency.

Verify the local electrical code and rated 2-phase voltage of local power grid before proceeding. If voltage of the utility is 120VAC, push the switch to the (left) side marked by "120V". Or push the switch to another side (right) for 240V configuration. Figure-8 provides a diagram for reference.

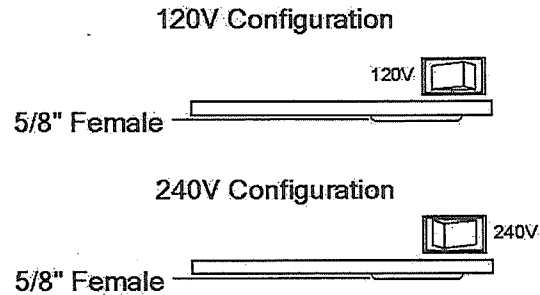


Figure-8, Input Voltage Reconfiguration



CAUTIONS!

Verify voltage of local utility power before proceeding. Fault selection may totally break down the power supply.



WARNING!

- ! Selection and reconfiguration of input voltage must be made by qualified personnel.
- ! The power supply must be turned off and disconnected from utility power before configuring input voltage.

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2.4 AC Output Connection (continued)

2.4.2 Output Voltage Reconfiguration

Selection of output voltage is quite simple. Three pins of the terminal block on left-hand side are marked by "0V", "60V" and "90V" respectively. A tap is connected with one of these three pins before delivery. Just simply switch the tap into the pin where the voltage required is present. Finally tighten seizure screws of the pin.

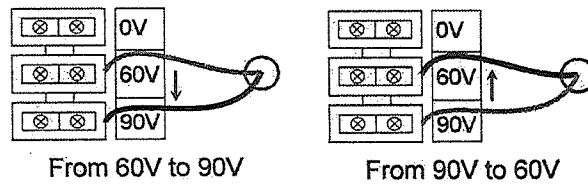


Figure-6, Output Voltage Reconfiguration



WARNING!

- Poor connection between cable/wire and the connectors may cause fire.
- The unit must be turned off prior to output voltage selection.



CAUTIONS!

Do the selection carefully. Wrong selection may damage the loads.

SAFETY PRECAUTIONS

- ♦ Read user/technical manual carefully before proceeding with any part of the unit.
- ♦ Installation and operation of the unit must be performed only by qualified personnel and always in accordance with applicable electrical codes.
- ♦ It is recommended that user contacts local utilities, local building maintenance departments, and cable/piping locator services to ensure that installation does not interfere with existing utility or building cables/piping.
- ♦ Always use proper lifting techniques whenever handling the unit.
- ♦ Do NOT connect the ac inlet while servicing the unit or installing the unit.
- ♦ Always wear insulating gloves and face shield whenever working with the unit.
- ♦ The unit must be well earthed before proceeding with installation or operation. Failure to do so can cause electrical shock.
- ♦ The unit should be installed vertically and place for installation of the unit must be ventilated and away from flammable, explosive and corrosive material.
- ♦ Wiring of the unit and connection of output ports must be firm and reliable. Poor connections may cause fire.
- ♦ Verify that AC input voltage to the equipment matches with respect to voltage and frequency prior to installation.
- ♦ Verify that output voltage from the equipment matches the voltage requirements of the connected equipment (load).
- ♦ Always refer to supplier's recommendation whenever REPLACING spare parts of the unit.
- ♦ Unauthorized alteration or repair is not allowed without supplier's written authorization.

2.3 Installations

2.3.1 Installation on Wooden Pole

- ✓ Use M12 machine bolts to install the bracket on the wooden pole.
- ✓ Hang the power supply onto the bracket and fasten the M8 seizure hex bolt.
- ✓ Done!

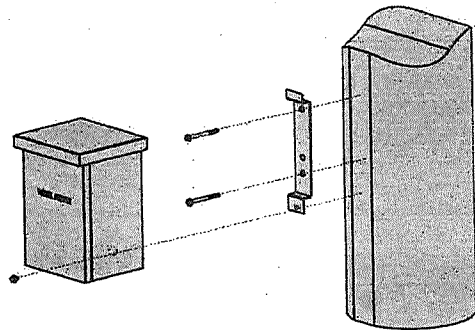


Figure-3, Wooden Pole Installation

2.3.2 Installation on Concrete / Steel Pole

- ✓ Easier! Use mounting strap to install the bracket on steel or concrete pole.
- ✓ Hang the power supply onto the bracket and fasten the M8 seizure hex bolt.
- ✓ Done!

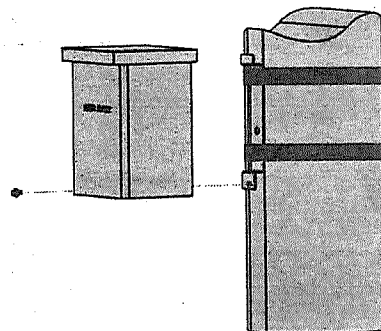


Figure-4, Steel / Concrete Pole Installation

1.2 Brief Introduction

PS SERIES power supply provides conditioned power to signal amplifier in cable television and broadband distribution systems.

Transformer that PS SERIES utilizes is ferro-resonant design, features fully regulated output voltage, stable performance and high reliability. Primary and secondary windings of the transformer are physically isolated from each other by a steel core which effectively reduces the capacitive coupling of spikes and noise to the secondary winding.

A resonant capacitor is connected to secondary winding of the transformer forming a tank circuit. The Advantage of this type of transformer/capacitor design is the ability of the transformer to regulate its output voltage over wide range of input voltages and output loading. It is advantageous in cable TV applications as active devices are protected from dangerous voltage fluctuations.

PS SERIES power supply is designed to be mounted on a wooden or concrete pole or wall. Installation kits that are along with the product make installation very easy.

**Configurations may vary on different models.*

1.3 Outline Diagram

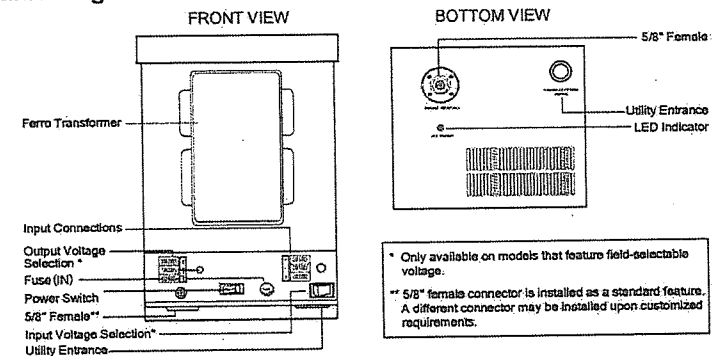


Figure-1, Outline Diagram

1.4 Technical Specifications

| Model | PS-60/90-6D | PS-60/90-15D | PS-60/90-15I |
|-----------------------|---|-----------------------------------|--------------|
| Input frequency | 60Hz | 60Hz | 50Hz |
| Input voltage | 120VAC or 240VAC, field-selectable | | 240VAC |
| Input voltage range | +/- 15% | | |
| Input protection | Fuse, 8A | Fuse, 8A @ 240VAC 15A @ 120VAC | |
| Power factor | 0.90 at full load | | |
| Output voltage | 60Vrms or 90Vrms, field-selectable | | |
| Output regulation | +/-5% | | |
| Output waveform | Quasi-square | | |
| Output current | 4A @ 90V and 6A @ 60V, max. | 10A @ 90V and 15A @ 60V, max. | |
| Output power | 360VA max. | 900VA max. | 900VA max. |
| Output protection | Current limited | | |
| Short current | 150% of max. current rating | | |
| Efficiency | ≥90% | | |
| Dimensions | 217 (W) x 190 (D) x335mm (H) 13.2" (W) x8.5" (D) x7.5" (H) | | |
| Finish | Powder coated | | |
| Material | Aluminum | | |
| Operating temperature | -40°C to 55°C | | |
| Humidity | 0 to 90% non-condensing | | |

Table-1, Technical Specifications

2. INSTALLATION

2.1 Installation Note

- ♦ Installation of the unit must be performed only by qualified personnel.
- ♦ Strictly follow installation directions.
- ♦ Installation of the unit must be firm and reliable. Failure to do so may result in that the unit drops from the installation location and possibly injure passerby. We don't assume any responsibility for damage of the unit and the injury caused by this.

2.2 Installation Kit

- ✓ Installation kit is composed of a bracket and a M8 hex bolts. To finish the installation, users need to prepare necessary screw drivers, adjustable wrench and two machines bolts. Sleeve anchors are required for wall mount installation.
- ✓ There are three mounting holes on the bracket. Using machine bolts to install the bracket on the wooden pole. If the installation is made on a concrete pole or steel pole, mounting straps shall be used.
- ✓ Finally, hang the unit onto the bracket and fasten the hex bolt at bottom of the unit.



WARNING!

Make sure installation of the bracket is firm and reliable. Or the unit may drop from the installation.

NOTE

Poles belong to the local utility. Before you install the power supply have both the mounting location and the methods approved by the utility.

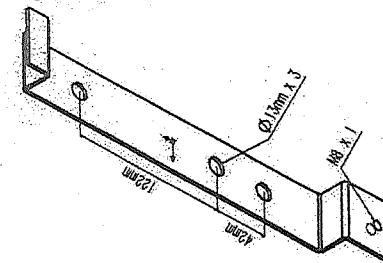


Figure-2, Installation Kit

1. OVERVIEW

1.1 Unpacking and Pre-installation Inspection

1.1.1 Unpacking

Remove PS SERIES Power supply from the shipping container and verify if all parts you ordered have been included. Standard package should contain the following:

- ✓ One (1) piece of Power Supply
- ✓ One (1) copy of Technical Manual (this document)
- ✓ Installation Kit

Carefully inspect the contents of the shipping container. If any items are damaged or missing, contact the supplier immediately. Most shipping companies have only a short claim period.

1.1.2 Pre-installation Inspection

- ♦ During shipping, movement of components may occur. Inspect the power supply for possible shipping-related failures, such as loosened or damaged connectors. If needed, inspect the interior for loose or damaged connectors. Correct any discrepancies before proceeding with the power supply installation.
- ♦ Do not attempt to install a damaged power supply without first passing a complete Pre-installation Inspection and Start-up Test.



CAUTIONS!

Use the original shipping container if the unit needs to be returned for service. If the original container is not available, make sure the unit is packed with at least three inches (or eight centimeters) of shock-absorbing material in all orientations to prevent shipping damage. We are not responsible for damage caused by improper packaging on returned units.

2.4 AC Output Connections

Output connection of PS SERIES power supply is made through 5/8" female connectors.

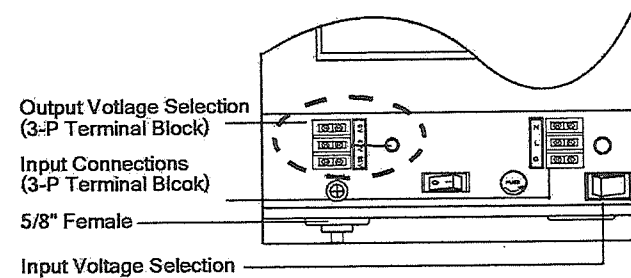


Figure-5, Output Connection

2.4.1 Output Connection

- 1) Prepare the incoming coaxial cable used for distribution of power and cable connectors (prepared by the users).
- 2) Remove external material of the cable about 4 centimeters long and leave the center core in good conditions.
- 3) Properly loosen the seizure screws on the pin terminal
- 4) Make center core of coaxial cable pass through 5/8" female connection and the pin terminal. Tighten the seizure screws.
- 5) Screw the cable connector (external fitting) into the 5/8" female connection.

PS SERIES

NON-STANDBY POWER SUPPLY

IMPORTANT NOTES

NOTE

Photographs contained in this manual are for illustrative purposes only. These photographs may not match your installation. Products are subject to change through continuing improvements without prior notice.

NOTE

User is cautioned to review and be fully aware of the drawings and illustrations contained in this manual before proceeding. If there are questions regarding safe operation of the unit, please contact the supplier directly. Save this user manual properly.

NOTE

Neither the manufacturer nor the supplier shall be held liable for any damage or injury involving its enclosures, power supplies, generators, batteries, or other hardware if used or operated in any manner or subject to any condition not consistent with its intended purpose, or is installed or operated in an unapproved manner, or improperly maintained.

NOTE

Following symbols have been placed throughout this manual. Where these symbols appear, use extra care and attention.



WARNING!

presents safety information to PREVENT INJURY OR DEATH to the technician or user.



CAUTION!

indicates safety information intended to PREVENT DAMAGE to material or equipment.

2.5 AC Input Connection

2.5.1 Connecting Utility

NOTE

An external service disconnect (UL listed) shall be installed between utility power and PS SERIES power supply. The disconnect device is provided by the user. Please consult the local supplier, supplier of the service disconnect and your local utility for specific installation instructions and guidelines. All electric codes apply.



CAUTIONS!

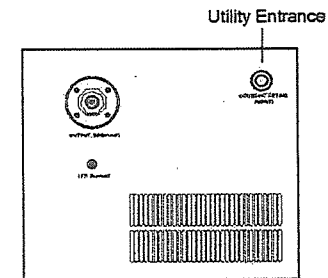
Verify nominal input voltage of the unit and make sure voltage of the utility power fed into the unit is in accordance with nominal input voltage of the unit. Fail to do so may damage the power supply.

PS SERIES power supply utilizes a 3-position terminal block for utility power connection. Positions marked by "0V", "120V" and "240V".

There is an opening of on bottom of the power supply enclosure for utility entrance. Make the utility power connection with terminal block of input connection through the opening according to local electric codes.

A pin terminal with seizure screw is given under input terminal block for grounding connection.

Figure-7, Utility Power Connection



WARNING!

The unit must be well earthed.

3. STARTUP & TEST

Once connections and configurations are made, start-up and test may begin. All loads must be removed from the units before starting the test.

- 1) Verify that AC input voltage to the equipment matches with respect to voltage and frequency again
- 2) Use *RMS meter* to measure output voltage of the unit.
- 3) If no output, please refer to **Trouble Shooting Guidelines**.



WARNING!

Transformer may be very hot during operation. Allow it to cool before service.

4. TROUBLE SHOOTING GUIDELINES

The table below is designed to display typical symptoms, causes and solutions, beginning with the most obvious and working systematically through the unit. Following solutions in the table, users can repair the units in the field. In the event that a component(s) of the unit need to be replaced, please contact the supplier for recommendations. Improper replacement may damage the unit, even the loads. If symptoms of problems that will have arisen are not listed in the table below, please contact the supplier for technical supports.

| Symptoms | Probable Causes | Solution |
|-----------|--|--|
| No output | Utility power failure | Verify utility power in line. |
| | Broken fuse | Check all fuses that for both input and output protection and replace the broken with new. |
| | Poor connection at 5/8" female connector | Verify the connection and make the connection again. |

Table-2, Trouble shooting