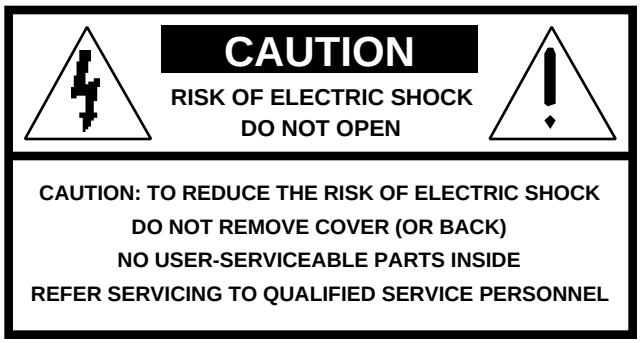
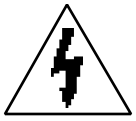
Safety Information





The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated"dangerous voltage" within the product's enclosure, that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Table Of Contents

Introduction

PXm250
PXm450
PXm900

Congratulations on your purchase of a new Carver Professional Power Amplifier. The PXm250, PXm450 and PXm900 are designed for any pro audio application. The PXm amplifiers are designed and produced by Carver Professional, a division of Phoenix Gold International, Inc. They combine the experience in pro audio and sonic heritage of Carver Professional with the performance, manufacturing quality and attention to detail that has defined Phoenix Gold International. Thank you for placing your confidence in Carver Professional and Phoenix Gold. We know your amplifier will provide many years of dependable service and reliable sound reproduction.

Please read this entire manual, especially the Safety Warnings, before operating your amplifier.

Unpacking and Paperwork

Carefully unpack the amplifier and keep the original carton and packing materials for future moving, shipment or long-term storage. After opening the box, please check for visible signs of damage that were not apparent from the outside of the box. If you encounter what appears to be concealed damage, please consult your Carver Professional Dealer before installing unit.

Important Paperwork

Make sure to save your sales receipt. Your receipt is extremely important to establish the duration of your Limited Warranty and for insurance purposes. Next, make a note of the serial number, which is located on the back of the amplifier. Record it in the space provided below for convenient reference.

Model: ___PXm250 ___PXm250BR ___PXm250SP
___PXm450 ___PXm450BR ___PXm450SP
___PXm900 ___PXm900BR ___PXm900SP

Serial Number: _____
Purchased at: _____
Date: _____

Finally, take a moment to fill out the Warranty Registration Card packed with the amplifier and return it to Carver Professional. This will allow us to keep you informed about new products, as they become available.

CARVER PROFESSIONAL

PXm250

FEATURES

- 250W bridged mono into 8 ohms
  175W per channel into 2 ohms
  125W per channel into 4 ohms
  75W per channel into 8 ohms
- Three connector versions available:
  Standard - XLR and 1/4" TRS inputs with Multi-way Binding Posts
  BR Version - Barrier Strip inputs with Multi-way Binding Posts
  SP Version - XLR and 1/4" TRS inputs with Neutrik™ Speakons™
- Independent level controls for CH1 & CH2
- Independent CH1 and CH2 switchable High Pass Filters, selectable at 30Hz or 80Hz
- Independent CH1 and CH2 selectable Clip Limiters
- Independent CH1 and CH2 selectable Input Sensitivity @ 0.775Vrms or 1.5Vrms
- Externally configurable for Parallel Mono mode, to operate both channels with a mono signal
- Externally configurable for Bridged Mono mode, to combine the power of both channels into a higher powered mono channel
- Protection circuitry includes Thermal and Short Circuit
- Power Ready, Signal Present, Clip, Protect and Thermal LED indicators for each channel
- Variable speed fan cooling
- RAMPoptional computer monitoring port

Power Output, both channels driven: (1kHz, 1%THD), 175W per channel into 2 ohms, 125W per channel into 4 ohms, 75W per channel into 8 ohms

Continuous Average Output Power, both channels driven: (20Hz to 20kHz, with no more than 1% THD), 120W per channel into 4 ohms, 70W per channel into 8 ohms

Bridged-mono operation: 250W into 8 ohms, 1kHz, <1% THD
240W into 8 ohms 20Hz to 20kHz, <1% THD

Parallel-mono operation: 70W per channel into 8 ohms, from 20Hz to 20kHz, <1% THD
120W per channel into 4 ohms, from 20Hz to 20kHz, <1% THD

Dynamic Headroom: 2.0dB

Frequency Response: 20Hz to 20kHz (+/- 0.5 dB)

Channel Separation: >55dB @ 1kHz

Damping Factor: > 180

Input Impedance: 20K ohms, balanced

Sensitivity: 0.775V / 1.5V rms for rated power into 4 ohms

Gain: 29dB, 23dB dependent on sensitivity

Input Overload: +20dBu

THD: <0.1% @ 60W

IM Distortion: <0.15%

Signal-to-Noise Ratio: >104dB, A-weighted, ref. to rated power into 8 ohms

Slew Rate: 29V/µ Sec.

CMRR: 55dB @ 1kHz Typical

Current Consumption: 41w @ idle, 144w with musical program, 424w @ full power into 8 ohms, (continuous), 643w @ full power into 4 ohms (continuous)

Power Requirements: 120VAC/60Hz (USA and Canada). Other voltages as required for export

Display: 5 LED indicators per channel;
1 red CLIP
1 yellow SIGNAL
1 green POWER ON
1 red PROTECT
1 red THERMAL

Size (H x W x D): 3.5" (2U) x 19" x 15.38"
89mm x 483mm x 391mm

Net Weight: 24.4 lbs., (11.1 kg)

Shipping Weight: 28.0 lbs., (12.7kg)

Due to ongoing research and development, all specifications and features are subject to change without notice.

Barrier strip input version available. Order PXm250BR.
Neutrik™ Speakon™ version available. Order PXm250SP.
Handle Kit available. Order PX2HK.

The PXm250 series is available in 100V, 120V and 230V 50/60Hz.

PXm450

FEATURES

- 450W bridged mono into 8 ohms
  275W per channel into 2 ohms
  225W per channel into 4 ohms
  150W per channel into 8 ohms
- Three connector versions available:
  Standard - XLR and 1/4" TRS inputs with Multi-way Binding Posts
  BR Version - Barrier Strip inputs with Multi-way Binding Posts
  SP Version - XLR and 1/4" TRS inputs with Neutrik™ Speakons™
- Independent level controls for CH1 & CH2
- Independent CH1and CH2 switchable High Pass Filters, selectable at 30Hz or 80Hz
- Independent CH1and CH2 selectable Clip Limiters
- Independent CH1 and CH2 selectable input sensitivity @ 0.775Vrms or 1.5Vrms
- Externally configurable for Parallel Mono mode, to operate both channels with a mono signal
- Externally configurable for Bridged Mono mode, to combine the power of both channels into a higher powered mono channel
- Protection circuitry includes Thermal and Short Circuit
- Power Ready, Signal Present, Clip, Protect and Thermal LED indicators for each channel
- Variable speed fan cooling
- RAMP optional computer monitoring port

SPECIFICATIONS

Power Output:, both channels driven:
(1kHz, 1%THD), 275W per channel into 2 ohms, 225W per channel into 4 ohms, 150W per channel into 8 ohms

Continuous Average Output Power, both channels driven:
(20Hz to 20kHz, with no more than 1% THD)
215W per channel into 4 ohms 140W per channel into 8 ohms

Bridged-mono operation:
450W into 8 ohms, 1kHz, <1% THD
430W into 8 ohms 20Hz to 20kHz, <1% THD

Parallel-mono operation:
140W per channel into 8 ohms, from 20Hz to 20kHz, <1% THD
215W per channel into 4 ohms, from 20Hz to 20kHz, <1% THD

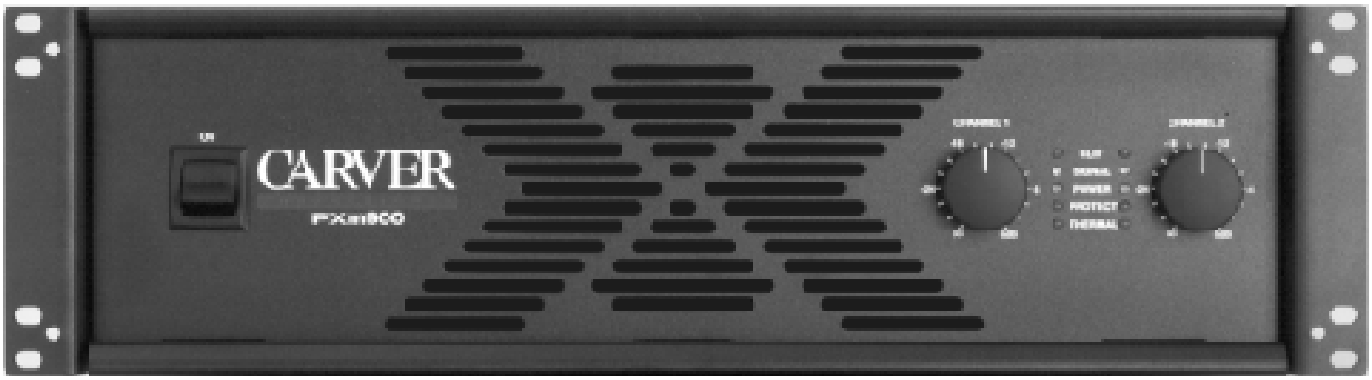
Dynamic Headroom: 2.0dB
Frequency Response: 20 Hz to 20kHz (+/- 0.5 dB)
Channel Separation: >55dB @ 1kHz
Damping Factor: > 200
Input Impedance: 20K ohms, Balanced
Sensitivity: 0.775V / 1.5V rms for rated power into 4 ohms
Gain: 31.8dB, 25.8dB dependent on sensitivity
Input Overload: +20dBu
THD: <0.1% @ 100W
IM Distortion: <0.15%

Signal-to-Noise Ratio:
>108dB, A-weighted, ref. to rated power into 8 ohms
Slew Rate: 29V/µ Sec.
CMRR: 55dB @ 1kHz Typical
Current Consumption:
54w @ idle, 216w with musical program, 640w @ full power into 8 ohms, (continuous), 976w @ full power into 4 ohms (continuous)
Power Requirements:
120VAC/60Hz (USA and Canada) Other voltages as required for export
Display: 5 LED indicators per channel;
1 red CLIP
1 yellow SIGNAL
1 green POWER ON
1 red PROTECT
1 red THERMAL
Size (H x W x D): 3.5" (2U) x 19" x 15.38"
89mm x 483mm x 391mm
Net Weight: 26.3 lbs. (12.0 kg)
Shipping Weight: 30.4 lbs. (13.8 kg)

Due to ongoing research and development, all specifications and features are subject to change without notice.

Barrier Strip input version available. Order PXm450BR.
Neutrik™ Speakon™ version available. Order PXm450SP.
Handle Kit available. Order PX2HK.

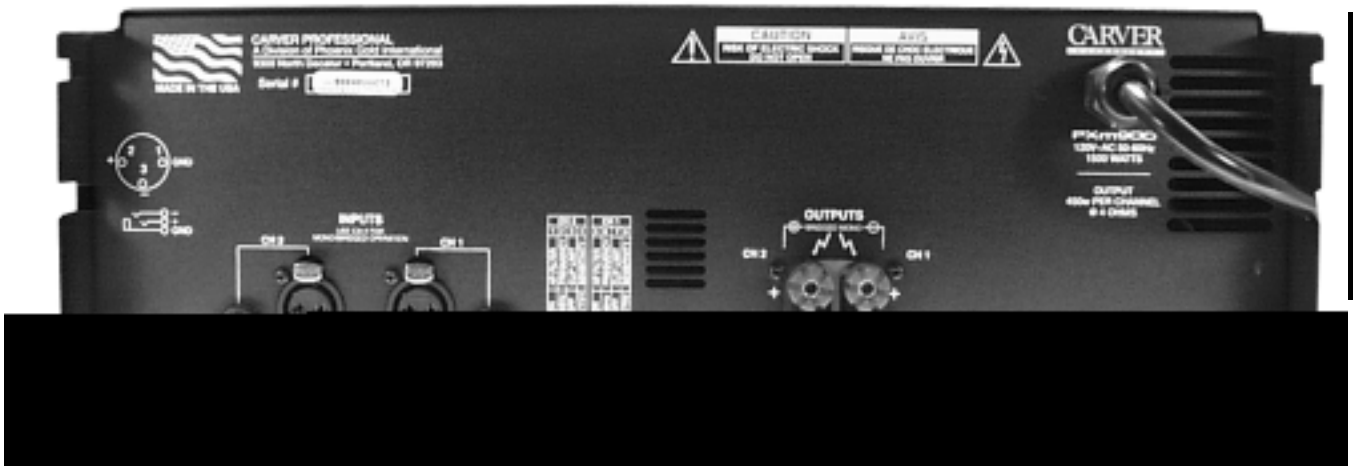
The PXm450 series is available in 100V, 120V and 230V 50/60Hz.



PXm900

FEATURES

- 900W bridged mono into 8 ohms
  550W per channel into 2 ohms
  450W per channel into 4 ohms
  300W per channel into 8 ohms
- Three connector versions available:
  Standard - XLR and 1/4" TRS inputs with Multi-way Binding Posts
  BR Version - Barrier Strip inputs with Multi-way Binding Posts
  SP Version - XLR and 1/4" TRS inputs with Neutrik™ Speakons™
- Independent Level controls for CH1 & CH2
- Independent CH1 and CH2 switchable High Pass Filters, selectable at 30Hz or 80Hz
- Independent CH1 and CH2 selectable Clip Limiters
- Independent CH1 and CH2 selectable input sensitivity @ 0.775Vrms or 1.5Vrms
- Externally configurable for Parallel Mono mode, to operate both channels with a mono signal
- Externally configurable for Bridged Mono mode, to combine the power of both channels into a higher powered mono channel
- Protection circuitry includes Thermal, Short Circuit and DC Fault
- Power Ready, Signal Present, Clip, Protect and Thermal LED indicators for each channel
- Variable speed fan cooling
- RAMP optional computer monitoring port



SPECIFICATIONS

Power Output, both channels driven: 550W per channel into 2 ohms 450W per channel into 4 ohms 300W per channel into 8 ohms

Continuous Average Output Power, both channels driven: (20Hz to 20kHz, with no more than 1% THD) 440W per channel into 4 ohms 280W per channel into 8 ohms

Bridged-mono operation: 900W into 8 ohms, 1kHz, <1% THD
880W into 8 ohms 20-20kHz, <1% THD

Parallel-mono operation: 280W per channel into 8 ohms, from 20Hz to 20kHz, <1% THD
440W per channel into 4 ohms, from 20Hz to 20kHz, <1% THD

Dynamic Headroom: 2.0dB

Frequency Response: 20 Hz to 20kHz (+/- 0.5 dB)

Channel Separation: >55dB @ 1kHz

Damping Factor: > 200

Input Impedance: 20K ohms, Balanced

Sensitivity: 0.775V / 1.5V rms for rated power into 4 ohms

Gain: 34.8dB, 28.7dB dependent on sensitivity

Input Overload: +20dBu

THD: <0.1% @ 200W

IM Distortion: <0.15%

Signal-to-Noise Ratio: >113dB, A-weighted, ref. to rated power into 8 ohms

Slew Rate: 29V/µ Sec.

CMRR: 55dB @ 1kHz Typical

Current Consumption: 94w @ idle, 384w with musical program, 1135w @ full power into 8 ohms, (continuous), 1792w @ full power into 4 ohms (continuous)

Power Requirements: 120VAC/60Hz
(USA and Canada)
Other voltages as required for export

Display: 5 LED indicators per channel;
1 red CLIP
1 yellow SIGNAL
1 green POWER ON
1 red PROTECT
1 red THERMAL

Size (H x W x D): 5.75” (3U) x 19” x 15.38”
133mm x 483mm x 391mm

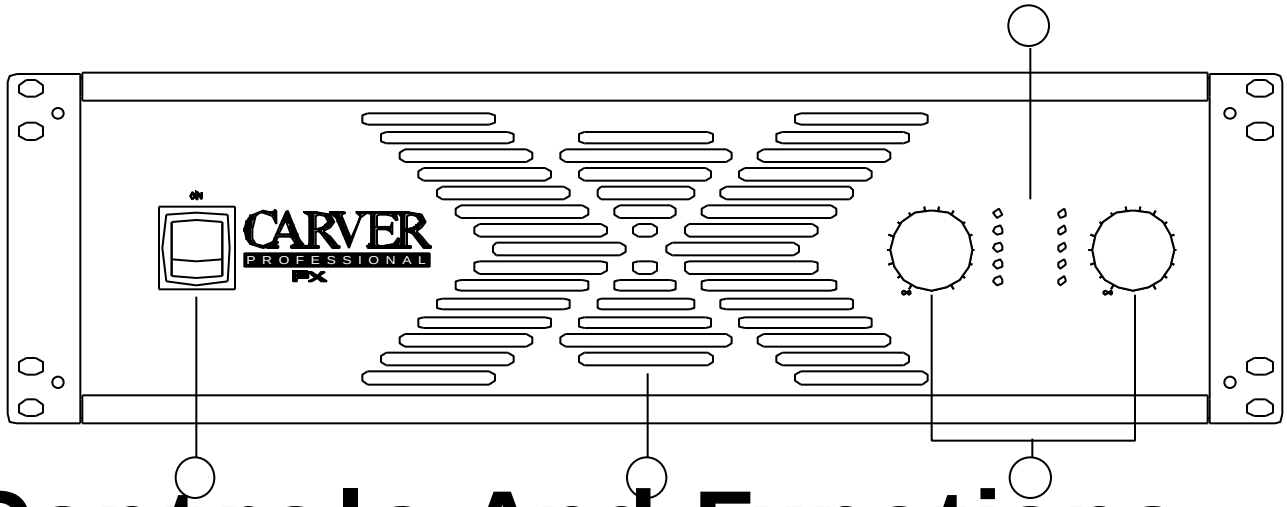
Net Weight: 38.5 lbs. (17.5kg)

Shipping Weight: 44.0 lbs. (20.0kg)

Due to ongoing research and development, all specifications and features are subject to change without notice.

Barrier Strip input version available. Order PXm900BR.
Neutrik™ Speakon™ version available. Order PXm900SP.
Handle Kit available. Order PX4HK.

The PXm900 series is available in 100V, 120V and 230V 50/60Hz.



Controls And Functions

1. POWER SWITCH
When this switch is engaged, the power turns ON, the PROTECT lights flash red and the Power indicators illuminate. Be sure all connections are made and double-checked before switching the power on.

2. EXHAUST VENT
Releases warm air pushed from heat sinks by fan. Air flow in the PXm amplifiers is from back to front.

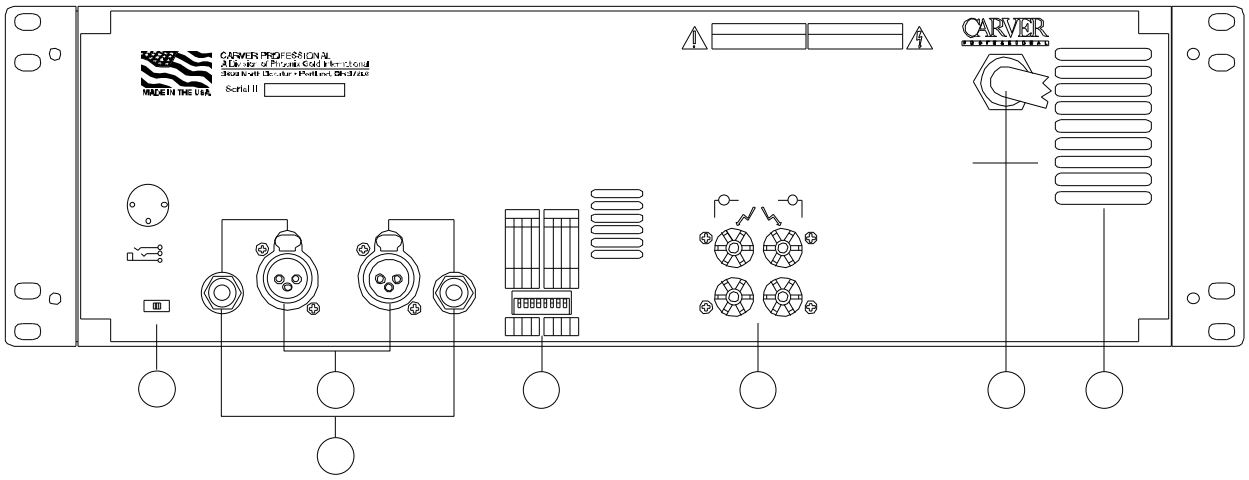
3. CH1 / CH2 LEVEL CONTROL
The level controls are used to adjust the input level of each channel. When the controls are fully clockwise the amplifier operates at maximum gain. Turning the controls counter-clockwise attenuates the input signal. Rear output level controls are available on the "BR" versions only. Operation would be the same as with front panel level controls.

4. CH1 / CH2 STATUS INDICATORS
THERMAL- Illuminates red when excessive heatsink and/or transformer temperature has been detected.
PROTECT- Illuminates red when the power switch is first turned on, or whenever there is an over-current condition at the output. These fault conditions are generally caused by a faulty load (short), extremely low impedance load.
POWER- Illuminates green when power is on and amplifier is ready to operate.
SIGNAL- Illuminates yellow when power is on and signal is present.
CLIP- Illuminates red when the output begins to clip.

5. OUTPUT CONFIGURATION SWITCH
The Output Configuration Switch is used to select between Normal Stereo operation, Parallel Mono operation, or Bridged Mono operation.

6. CH1 / CH2 INPUT CONNECTORS
A 1/4" TRS (tip-ring-sleeve) connector and an XLR connector are provided for both CH1 and CH2. They can be used with either balanced or unbalanced signals (see input wiring on page 11 for more information). The TRS and XLR connector for each channel are connected in parallel to enable daisy chaining the input signal from one amp to another.

6A. CH1 / CH2 INPUT CONNECTORS
The Barrier Strip Version of the PXm amplifiers have a six position barrier strip. Horizontal connection accepts 8mm spades. See page 12 for more information.



7. DIP SWITCH
An eight-position DIP switch is available to externally access certain functions of the amplifier independently for each channel. Positions #1 and #5 turn on/off the High Pass filters. Positions #2 and #6 select 30Hz or 80Hz as the cutoff frequency. Positions #3 and #7 activate the Clip Limiters. Positions #4 and #8 select an input sensitivity of .775Vrms or 1.5Vrms.

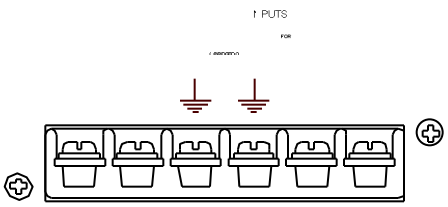
8. CH1 / CH2 SPEAKER OUTPUTS
Multi-way binding posts are used to connect the loudspeakers to the amplifier outputs. The red terminals are the output signal connection (+), and the black terminals are the output signal connection (-). The black terminals are internally tied to signal ground.

8A. CH1 / CH2 SPEAKER OUTPUTS
Three Neutrik™ Speakon™ connectors are located on the rear panel of the "SP" versions only. There is one each for channel 1, channel 2 and "Bridged Mono" outputs.

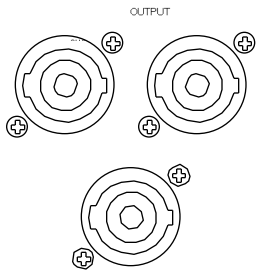
9. POWER CORD
Connect to a properly configured outlet providing the line voltage specified for your model.

10. AIR INTAKE
Slots are provided on the back and left side of the amplifier to supply cool air for the fan to efficiently manage the thermal condition of the amplifier. It is essential to the proper performance of the amplifier that these slots are kept clean and unobstructed to allow the free flow of fresh air into the amplifier. The fan is a variable speed fan, and the internal temperature of the amplifier controls the fan's speed.

(6A) PXm900BR



(8A) PXm900SP



Installation

Location and General Precautions

Observe the following precautions when choosing a location for your amplifier.

A. Do not expose the unit to rain or moisture. If a fluid or foreign object should enter the unit, disconnect the power plug and contact an authorized dealer or service center. Do not pull the plug by pulling on the cord; grasp the plug firmly.

B. Protect from heat and allow adequate ventilation. Place away from direct sources of heat, such as heating vents and radiators. All components produce some heat during operation, so make sure that the ventilation slots are not covered and that air is allowed to circulate freely behind and above the unit. Excessive heat is the single greatest source of premature component failure.

Mechanical Considerations

The PXm250 and PXm450 require two rack space units (3.5") and the PXm900 three rack space units (5.25"). All three have a depth of 15.38" inside the rack, including the rear supports. Secure the unit mechanically using four screws with washers to prevent marring the front panel. Neoprene rubber washers are a good choice because they grip the screw head and prevent them from backing out when vibrated or transported.

Rear Support for Road Applications

If the PXm amplifiers are rack mounted, and the rack is transported, mechanical support for the rear of the amplifiers is required. This could take the form of a shelf across the rear of the rack or brackets that engage the rear of the unit.

Thermal Considerations

When PXm amplifiers are used freestanding, no thermal considerations are necessary other than keeping the ventilation slots open. If the amplifiers are rack-mounted, ensure that adequate ventilation exists in front of, behind and to the sides of the amplifier. When several amplifiers are mounted together in a rack, you may need to provide air inlets from the outside of the rack. The PXm amplifiers are fan cooled. The fan is internally mounted so that it draws air from the back and left side, and exhausts it out the front. The PXm amplifiers may be stacked directly on top of each other without spacer panels. If the amplifiers are used with other amplifiers, ensure that the heat output from the other amplifiers doesn't interfere with the ventilation of the PXm amplifier (or vice versa).

AC Power Considerations

Ensure that the PXm amplifier is plugged into an outlet capable of supplying the correct voltage specified for your model and enough current to allow full-power operation of all amplifiers plugged into it. The current demand of a power amplifier varies depending on several factors, including the impedance of the load, the output level of the amplifier, and the crest factor and duty cycle of the program material. Under typical conditions reproducing rock music, with both channels driven into 4 ohms to the point where musical peaks are just at the clipping point, the amplifiers require the following average currents:

PXm250: 1.8A for 120V versions, .94Afor 230V versions
PXm450: 2.5A for 120V versions, 1.3A for 230V versions
PXm900: 5A for 120V versions, 2.6A for 230V versions

Magnetic Leakage Considerations

The PXm amplifiers may be mounted without concern for magnetic flux leakage, within the confines of common sense. For example, it's not a good idea to mount any power amplifier near a microphone input transformer or magnetic storage media.

Input Wiring

(See page 18 for recommended Carver Professional Accessories)

Standard Version

The 1/4" TRS input connectors will accept either unbalanced 1/4" phone plugs or balanced 1/4" TRS phone plugs. The female XLR will accept a male XLR connector. The input signal can be used with either unbalanced shielded single conductor or balanced shielded 2 conductor cables. Use shielded coaxial cable to conduct the signal from the source (i.e. mixer, equalizer, CD player) to the amplifier.

For balanced operation:

1/4 inch phone plug: Use a 3-conductor TRS (tip-ring-sleeve) 1/4" phone plug. The tip of the plug carries the "+" (high, non-inverting) side of the signal, the ring carries the "-" (low, inverting) side of the signal and the sleeve is ground (see Figure A).

XLR: Use a male XLR connector. Pin 2 carries the "+" (non-inverting) side of the signal, Pin 3 carries the "-" (low, inverting) side of the signal, and Pin 1 is ground (see Figure B).

For unbalanced operation:

1/4" phone plug: Use a 2-conductor (tip-sleeve) 1/4" phone plug. The tip of the plug carries the signal and the sleeve is the ground. The sleeve (see Figure C) automatically grounds the ring connection in the jack.

XLR: Pin 2 carries the signal, and Pin 1 is ground. Short Pin 3 to Pin 1 in order to reference the input differential amplifier for the correct gain (see Figure D).

BR Version

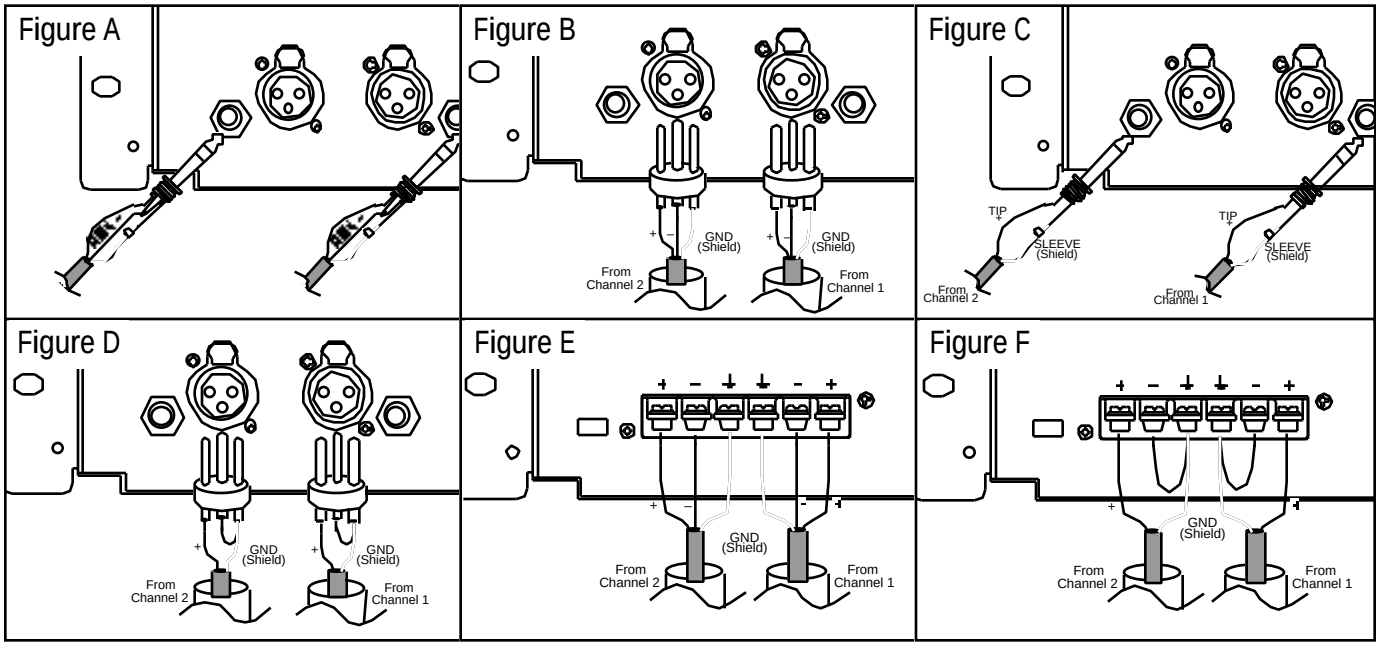
For balanced operation:

Use shielded twisted pair balanced line type cable with crimp-on or solder type 8mm spade terminals. For either channel connect the "+" (high, non-inverting) side of the signal to the terminal labeled "+" on the Barrier Strip. Connect the "-" (low, inverting) side of the signal to the terminal labeled "-" on the Barrier Strip. Connect the shield to the "ground" terminal (see Figure E).

NOTE: Confirm which wires are "+" and "-" from the source unit. Refer to the 1/4" plug and XLR instructions for proper configuration if these plugs are used at the source unit.

For unbalanced operation:

Use shielded single conductor coax type cable or twisted pair balanced line type cable with crimp-on or solder type spade terminals. Connect the hot side of the signal to the terminal labeled "+" on the Barrier Strip. Connect the shield to "ground" and connect a jumper wire between "ground" and the (-) terminal (see Figure F).



High Pass Filter

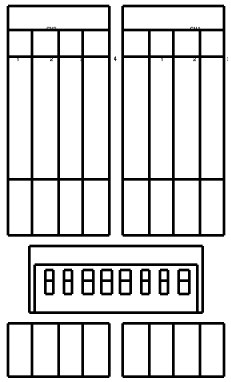
This filter will remove unwanted low frequency components from the input signal when engaged. It is engaged or disabled from the Dip Switch located on the rear panel of the amplifier. The High Pass Filter is switched independently for each channel at position #1 for CH2 and position #5 for CH1. *The High Pass Filter is set at the factory to its disabled position.*

High Pass Filter Cut Off Frequency

The High Pass Filter Cut Off frequency is independently selectable for each channel at a frequency of either 30Hz or 80Hz.

In the 30Hz position this filter performs much like a subsonic filter, eliminating power-robbing low frequencies below the audible or useable range. In the 80Hz position the High Pass Filter protects sensitive high frequency drivers from low frequency transients that could damage voice coils or diaphragms. The 80Hz position also is effective when used in conjunction with a 70V distributed system by preventing low frequencies from saturating the transformers. The DIP Switch positions for the High Pass Filter Cut Off are position #2 for CH2 and position #6 for CH1. *The High Pass Filter Cut Off is set at the factory to the 30Hz position, however the High Pass Filter is disabled when the unit is shipped from the factory.*

NOTE: When using the PXm amplifiers, or any high powered amplifier, in multi-way systems as a high frequency amplifier, it is recommended that a capacitor be used in series with the high frequency drivers. This will ensure that the delicate high frequency voice coils are protected in case of a catastrophic amplifier failure.



Dip Switch

Clip Limiter

The Clip Limiter when engaged will reduce the negative effects of clipping when the source signal overdrives the amplifier. It should be noted that if the input signal contains clipped signals when it arrives at the amplifiers input, the Clip Limiter will not eliminate this unwanted distortion. The Clip Limiter is engaged independently for each channel on the DIP Switch located on the rear panel of the amplifier at switch position #3 for CH2 and switch position #7 for CH1. *The Clip Limiter is set at the factory to its disabled position.*

Input Sensitivity

The input sensitivity can be changed to 1.5Vrms. The input sensitivity is set independently for each channel on the DIP Switch located on the rear panel of the amplifier. Input sensitivity is switched at position #4 for CH2 and at position #8 for CH1. *The input sensitivity is set at the factory to .775Vrms for rated output.*

Output Wiring

(See page 18 for recommended Carver Professional Accessories.)

Use heavy gauge cable for speaker connections. As the distance between the amplifier and the speakers increases, the cable diameter should be larger to minimize power loss across the cable, and to improve the damping of the speaker. Cable thickness specifications (or gauges) get smaller as the cable gets thicker, thus a 14 gauge cable is thicker than 16 gauge cable. Use the following as a guide: up to 25 feet use 16 gauge cable, up to 40 feet use 14 gauge cable, up to 60 feet use 12 gauge cable, up to 100 feet use 10 gauge cable, up to 150 feet use 8 gauge cable and up to 250 feet use 6 gauge cable. This will ensure that the resistance of the speaker cable is less than 5% of 4 ohms, resulting in a transmission loss of less than 0.5dB. Class 1 (NEC) cable must be used.

Multi-way Binding Posts: This output connector can accept a spade lug, bare wire, or banana connections (except CE approved versions). Be sure that all the fine strands of the cable are twisted together and contained within the connector. If even one strand is loose and can touch the adjacent terminal, a short circuit may result.

Polarity

Loudspeakers must be connected with consistent polarity for correct phasing between them. Incorrect phasing will do no physical harm, but frequency response will be affected. The key is to make sure that all speakers connected to the speaker terminals are hooked up the same way. Connect the black post (-) at the speaker output of the amplifier to (-) on the back of the speaker, and the red post (+) on the speaker output of the amplifier to (+) on the back of the speaker.

Bridged Mono

"Bridged Mono" mode is used to tie the two amplifier channels together thereby doubling the power of the amp into a mono load. To configure the amplifier for "Bridged Mono" operation, change the output configuration switch located on the back panel of the amplifier. When in the "Bridged Mono" setting connect the input signal to CH2 input (CH1 input is disabled in "Bridged" mode). Connect the speaker(s) to the two red or (+) speaker terminals. The CH2 (+) terminal is the high (+, or non-inverting) side, and the CH1 (+) terminal is the low (-, or inverting) side. When connected in this way, each channel "sees" one-half the impedance of the speaker(s) that are connected between them. If an 8 ohm speaker is used, each channel will see a 4 ohm load. Therefore it is not recommended that any load lower than 8 ohms be connected between the speaker terminals in this mode of operation. Use Parallel Mono operation for lower impedance loads. **(CH1 input and CH1 level control are disabled).**

1) **CAUTION:** In "Bridged Mono" operation, the output connections are actually a balanced output configuration. This means that both output terminals have voltage present (neither one may be grounded). If through negligence you should become the ground, the voltages may be dangerous.

2) Never change the output configuration switch from one mode to another with the amplifier powered "ON". Always make sure that the proper connections have been made for the operating mode selected before turning power "ON".

Parallel Mono

"Parallel Mono" mode allows both channels to be driven simultaneously with a single (mono) input. To configure the amplifier for Parallel Mono operation, change the output configuration switch located on the back panel of the amplifier. Connect the input source to CH2. Connect speaker(s) to CH1 or CH2 or both. **(CH1 input and CH1 level control are disabled).**

Note: To daisy chain the input signal to additional amps, use the unused input connector on CH2.

70V Distribution Systems

The PXm amplifiers can be used to drive 70V distributed systems using Carver Professional output distribution transformers (available separately from your Carver Professional dealer. Order XO125 for the PXm250. Order XO200a for the PXm450 and for the PXm900 order the XO450a. Connect one transformer to the output of each amplifier channel to deliver 125 watts for the PXm250, 225 watts for the PXm450 and 450 watts for the PXm900 to the 70-volt system. As with all 70-volt systems, step down transformers are required at each loudspeaker. The XO125 has taps for 25Vand 70Vsystems, the XO200Ahas taps for 25V and 70Vsystems and the XO450A has taps for 70Vand 100Vsystems. When using the amplifier in a 70Vdistributed system with transformers, it is advisable to set the “High Pass” filter to “On” and the “Cut-off Frequency” to 80 Hz. This prevents frequencies below 50 Hz from possibly saturating the transformers, and appearing to the amplifier as a short circuit.

70V Direct Drive

The PXm900 has sufficient output voltage to drive a 70V distributed system without the use of a step-up transformer, in the "Bridged Mono" mode. The PXm900 can deliver 900 watts to the 70-volt system in the "Bridged Mono" mode.

Operating Tips

Using the PXm Amplifiers

Once the amplifier has been installed and wired into the system, you are ready to use it. Here are some tips to help you get the most from your new PXm amplifier.

- Verify that the switches (Output Configuration, Input Sensitivity, High Pass Filter and Clip Limiter) have been set to the mode or selection that you had intended for your application.
- When you power up the system for the first time (out of the carton), it's a good idea to start with all of the amplifier level controls turned down (counter-clockwise), then advance them slowly, one at a time, so that you can confirm that each amplifier channel is operating normally.
- Be sure that the input level controls are set sufficiently high to allow the preceding device to drive the amplifier to full output. For most installations, this is wide open (fully clockwise).
- Once you have established settings, it is a good idea to mark them down, either on paper, or on pieces of tape or sticky-dots attached to the amplifier's panel.
- In bi-amplified (multi-amp) systems, it is a good idea to start with the low-frequency amplifiers turned down, and to check each frequency range from highest to lowest to ensure that each loudspeaker component is operating correctly.
- When using the PXm amplifiers, or any high powered amplifier, in multi-way systems as a high frequency amplifier, it is recommended that a capacitor be used in series with the high frequency drivers. This will ensure that the delicate high frequency voice coils are protected in case of a catastrophic amplifier failure.

Care and Service Assistance

Care: Wipe off the PXm Amplifier's front panel and chassis from time to time, with a soft, dry cloth. If you have something stubborn to remove, use a mild dish soap or detergent applied sparingly to a soft cloth. Don't use alcohol, ammonia or other strong solvents.

Service Assistance: We suggest that you read the Limited Warranty completely to fully understand your warranty/service coverage. Please promptly complete and return the Warranty registration card. Also, be sure to save the sales receipt in a safe place. It will be necessary for warranty service. If your Carver Professional product should require service, you may contact the Carver Professional Technical Service Department by calling (503) 978-3363 or by writing to us at the Factory address found on page 16. We will then direct you to the nearest in our national network of Authorized Warranty Service Centers, or give you detailed instructions on how to return the product to us for prompt action. If you should have questions or comments, please write to the Factory address shown on page 19, or contact us via email at **carverpro@imagina.com** or at our web site: **http://www.carverpro.com**. Please include the model and serial number of your Carver Professional product, your complete address and daytime phone number.

In Case of Difficulty

If you are having trouble, or suspect a problem with your PXm amplifier, try some simple troubleshooting before contacting an Authorized Carver Professional Dealer, Authorized Carver Professional Service Center or Carver Professional Technical Service. Below are listed some general problems and items that should be checked in an attempt to resolve the difficulty.

No Sound, No Power
This is usually an indication of a power supply problem, in either the power line itself or the amplifier's power supply. Check the following:

1. PXm amplifier power is switched off.
2. Line cord is disconnected.
3. Poor fit between the plug and AC receptacle.
4. Power off at AC receptacle (check with tester or lamp).
5. The amplifier is plugged into a switched outlet. Verify that the outlet is live.
6. PXm amplifier fuse has blown. Check and replace fuse.

Power On, Low Output or No Output
Low or no output problems are usually signal-source, bad cable or partial output short circuit related.

1. The input level controls are set too low.
2. Move the input connection to another amplifier that you know is working to verify that it is not a source problem.
3. Check speaker connections. Be sure that there are no small strands of wire touching similar strands coming from the other wire in the cable.
4. Make sure the speakers are functioning correctly.
5. If you are using bridged-mono mode, ensure that the Output Configuration Switch is set correctly.
6. Use a voltmeter to determine if the power line voltage is dropping excessively when the amplifier is driven hard.

Playback Is Mixed with Hum
1. Check or replace the connecting cables, between source and amplifier's input.
2. Make sure that each screw terminal connection is tight.
3. Signal cables may have been routed too closely to the AC cables, power transformers, motors or EMI inducing device.
4. Try connecting another source to the power amplifier inputs. If the hum stops, the problem lies with the original source component.

Distortion
Distortion is usually caused by excessive loss in the input controls (the mixer/equalizer/crossover cannot produce enough output), overdriving resulting in output clipping, or current limiting caused by excessively low load impedance.

1. Check the setting of the input level controls. If set too low, the preceding piece of equipment may not have sufficient output to overcome the loss.
2. Check the speaker connections and verify that all screw connections are tight and that there are no stray strands of wire to cause short circuits.
3. Verify that the total load impedance presented to the amplifier is within the limits described in this manual for the mode of operation selected.

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Warranty Information

Professional Power Amplifiers: 5 years

NOTE: The following warranty is exclusive to the United States and its possessions and territories. Please see your Carver Professional dealer or distributor for the correct warranty information in your area or locale.

WHAT IS COVERED:

THIS WARRANTYCOVERS DEFECTS IN MATERIALAND WORKMANSHIPONLY. This limited Warranty DOES NOT extend to: 1) damage caused by shipment, 2) damage caused by accident, misuse, abuse, failure to perform owner maintenance, or operation contrary to the instructions in the Carver Professional owner's manual, 3) units on which the serial number has been defaced, modified or removed and 4) damage resulting from modification or attempted repair by any other person than authorized by Carver Professional.

WHAT WE WILL PAY FOR:

Carver Professional will pay all labor and material expenses for items covered under this Limited Warranty. See the next section concerning shipping charges.

WHAT YOU MUST DO TO OBTAIN WARRANTY SERVICE:

In the event your Carver Professional product requires service, contact your Carver Professional Authorized Dealer / Contractor or contact Carver Professional (ATTN: Customer Service Dept.) P.O. Box 83189, Portland, OR 97283, or call Customer Service Department directly at (503) 978-3363. You will be directed to an Authorized Carver Professional Service Station or receive instructions to ship the unit to the factory. Please save the original carton and packing materials in case shipping is required. Please do not ship parcel post. Include a complete description of the problem, the associated components and connections, and a copy of the purchase receipt. Carver Professional does not pay initial shipping costs. Return shipping costs will be pre-paid if repairs were covered by the scope of this warranty.

YOU MUSTRETAIN AND PROVIDE YOUR SALES RECEIPTTO OBTAIN COVERAGE UNDER THIS LIMITED WARRANTY.

The warranty period begins from the date of the first consumer purchase from an Authorized Carver Professional Dealer. Any implied warranties for merchantability and fitness for a particular purpose required by any state law are limited in duration to the warranty period of your product. The warranty set forth above is exclusive and no other, written or oral, is expressed or implied. Carver Professional specifically disclaims the implied warranties and merchantability and fitness for a particular purpose.

EXCLUSION OF CERTAIN DAMAGES:

In no event shall Carver Professional be liable for property damage, or any other incidental or consequential damages, which may result from failure of this product. If your Carver Professional product proves defective in material or workmanship, the liability of Carver Professional shall be limited to the repair or replacement, at the option of Carver Professional, of any defective part.

STATE LAWS MAY DIFFER:

Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights, and you may have other rights, which vary, from state to state.

OTHER IMPORTANT PROVISIONS:

Carver Professional reserves the right to make changes in design and improvements to its products without the responsibility of installing such changes or improvements on products previously sold by Carver Professional. We suggest that you attach your purchase receipt to this Warranty and keep both documents in a safe place. Thank you for your choice of a Carver Professional Amplifier.

Cables and Accessories

For the optimum connection of your PXm amplifier, here is a sample of the many accessory products available from Carver Professional. For more information on these accessories, or to receive a full-line catalog of Carver Professional Accessories, see your Authorized Carver Professional Dealer / Contractor, or contact Carver Professional at 503-978-3344.
Email: **carverpro@imagina.com** Web Site: **http://www.carverpro.com**

CONNECTORS

• 1/4" Connectors (Balanced)	GS4MS5	TRS Plug - Solder Cup type w/24kt Gold Plated Plug (accepts 5.0mm Cable)
	RM4MS5	TRS Plug Nickel Plated (accepts 5.0mm cable)
• 1/4" Connectors (Unbalanced)	GS4MM5	Mono Phone Plug - Solder Cup type w/24kt Gold Plated Plug (accepts 5.0mmCable)
	RS4MM5	Mono Phone Plug - Nickel Plated (accepts 5.mm Cable)
• XLR Connectors	GSXM7	Gunmetal Grey Plated Male XLR Connector (accepts 7.0mm Cable)
	GSXF7	Gunmetal Grey Plated Female XLR Connector (accepts 7.0mm Cable)
	RSXM7	Nickel Plated Male XLR Connector (accepts 7mm Cable)
	RSXF7	Nickel Plated Female XLR Connector (accepts 7mm Cable)
• Spade Terminals	CP PRO8	Pro Series 7-9 Gauge Multi-Stud Spade
	CP PRO80	Pro Series 7-9 Gauge Slotted spade
	CP PRO404	Pro Series 12-16 Gauge Spade
	CP PRO81	Pro Series 7-9 Gauge Slotted Right Angle Spade
• Banana Plugs	CPA405	4.0mm tighter fitting Multi-Purpose Banana for 16-18 Gauge
	CPA408	Crimp-on 4.0mm Banana Plug for 12-16 Gauge
	CP ZPB1	Crimp-on 4.0mm Banana Plug for 8-12 Gauge ZeroPoint Reference Cable
	CP Dual	Dual 4.0mm Banana Plug for 12-18 Gauge
	CP PRO Dual	Pro Dual 4.0mm Banana Plug for 9-14 Gauge
• Neutrik™ Speakons™	CP NL4FC	4 Conductor Female Cable Mount Connector
	CP NL8FC	8 Conductor Female Cable Mount Connector

SIGNAL CABLE WITH CONNECTORS
- ZEROpoint PRO QLX Quadralink Twisted Pair Balanced Grade Cable w/ 1/4" TRS plugs
- ZEROpoint PRO QLX Quadralink Twisted Pair Balanced Grade Cable w/ XLR to XLR
- True Balanced Pro OFC Cables w/Dual 24kt Gold Plated GS Series 1/4" Plugs

SIGNALCABLE BULK
- ZEROpoint Musical Reference Interconnect Cable-Sapphire Blue
- ZEROpoint Pro Twisted Pair Interconnect Cable
- ZEROpoint PRO QLX Quadralink Interconnect Cable
- ZEROpoint TRX PRO - Interconnect Cable

SPEAKER CABLE WITH CONNECTORS
- Super OFC 2 Conductor Speaker Cable - 1/4" To Dual Banana
- Mondo Series 2 Conductor Speaker Cable 10, 12, 14, 16 AWG - 1/4" Plugs
- Mondo Multi Series Ultra Flexible Round 2 Conductor Cable - Neutrik™ Speakons™
- Mondo Multi Series Ultra Flexible Speaker snakes w/3' Fan Ends - Various Connector Combinations Available

SPEAKER WIRE BULK
- ZeroPOINT Musical Reference Speaker Wire - 2 and 4 Conductor
- Mondo Series Ultra Flexible Round 2 Conductor Speaker Wire
- Mondo Multi Series Ultra Flexible Round 13 AWG Multi Conductor Speaker Wire

70V TRANSFORMERS
- XO125 for use with PXm250 in 70V distributed systems
- XO200a for use with PXm450 in 70V distributed systems
- XO450a for use with PXm900 in 70V distributed systems

†5 Year Warranty

Made In America

†180 DAY Performance Guarantee

†Available in North America only

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