

IntelligentDC Products Wiring Verification



CAUTION: Very Important! Please review this document in its entirety before powering up your system for the first time! It is very important to verify and measure the cabling before applying power—damage caused by errors in wiring are not covered under warranty.

Thank you for choosing a Meyer Sound IntelligentDC system. These instructions are intended to help you verify the correct wiring of your system during installation and/or troubleshooting. To ensure your system is installed correctly, it is extremely important that you follow all guidelines laid out in your product manuals, as well as those provided in this document. Failure to do so could result in damage to your Meyer Sound system and may void your product’s warranty. It is particularly critical to verify all cabling, input modules, and power supplies before applying power to avoid damaging the system. We strongly suggest you review this document in its entirety before powering up your system for the first time. If you have any questions about this document or are unsure whether your system has already been damaged from improper wiring or connections, or misuse, please contact Meyer Sound for assistance.

IntelligentDC Components

The heart of the IntelligentDC system is the MPS Power Supply: a 48 Volt DC power source and a basic audio signal distribution device. The MPS-488HP has 2 different versions to accommodate different output connectors: Phoenix (Figure 1), and EN3 (Figure 2). The smaller MPS-482HP is shown in Figure 3. It has one 6-pin Phoenix connector that supports two audio input sources and two XLR input connectors. Use only one set—either Phoenix or XLR. The MPS-482HP output connectors are Phoenix. Please note the power supply version with which you are working and proceed accordingly when installing cabling.



Figure 1: MPS-488HP with Factory-installed RMS Option



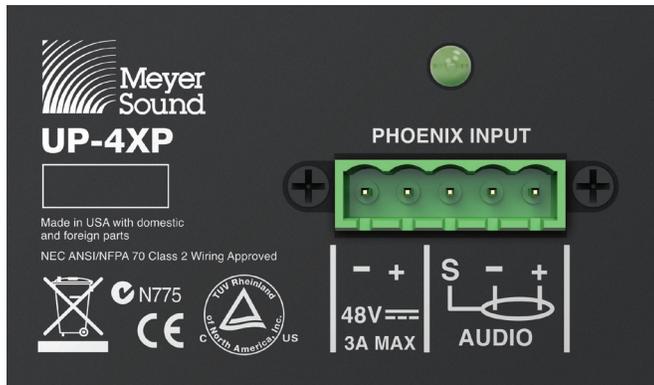
Figure 2: MPS-488HP with Factory-installed RMS Option



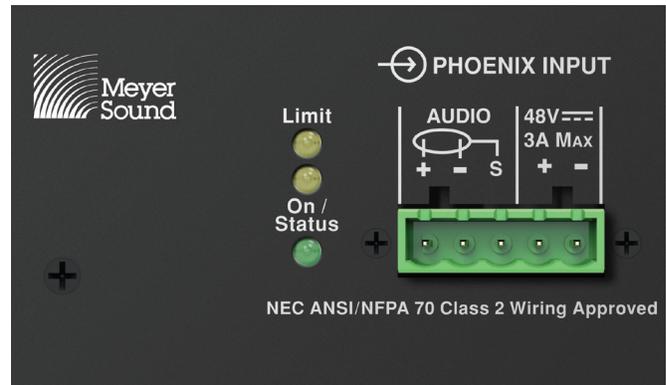
Figure 3: MPS-482HP

Input Connector Types

There are 3 types of input connectors for IntelligentDC loudspeakers: Phoenix, EN3, and ECO-M (Figure 4). Please refer to the labeling when troubleshooting. With Phoenix connectors, please note the orientation of the connector on your loudspeaker. The labeling will clearly indicate the correct orientation for inserting the cable (see the top row of Figure 4).



Phoenix Input Connector (Power-Audio Orientation)



Phoenix Input Connector (Audio-Power Orientation)



EN3 Input Connector



ECO-M Input Connector

Figure 4: Different Meyer Sound Loudspeaker Connector Types

MPS Power Supply LED Behavior

The voltage and current LEDs are helpful in troubleshooting and verifying the loudspeaker system (Figure 5).

Normal operation:

- The blue voltage LED indicates the presence of voltage on that channel and should be lit when the MPS-488HP/MPS-482HP is powered on.
- The green current LED is only lit if there is a load connected to that channel. The brightness of the green LED depends on the current being drawn on that channel.

Error indicators:

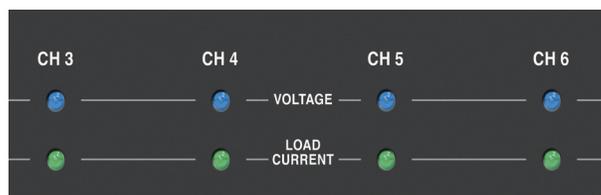
- A flashing green LED (MPS-488HP models only) or unlit green LED (MPS-482HP model only) and unlit blue LED indicates a surge or a short on that channel.
- For the MPS-482HP, also check the red LED. If the red LED lights up, it indicates a blown or open fuse on that channel. In this case, power down the MPS-482HP, check the wiring and loudspeaker for shorts, and then replace the fuse for the channel.



NOTE: Use only Meyer Sound PN 420.041 when replacing the fuse.

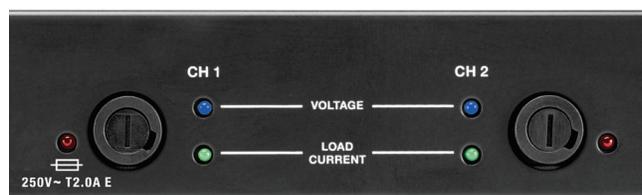


CAUTION: If any of the LEDs indicate an error condition, reverify the wiring and connections. Contact Meyer Sound if further instructions are needed.



MPS-488HP

Figure 5: Front Panel LEDs



MPS-482HP

Block Diagram & Signal Flow for IntelligentDC Systems

The block diagram shown in Figure 6 is a simplified view of the signal paths between the MPS-488HP power supply and the IntelligentDC loudspeaker. Audio signal is applied via XLR to any of the power supply’s 8 inputs. Multiple outputs can be linked together for convenience via the input link switches. The audio signal and DC voltage is then sent to the loudspeaker on a single 5 conductor cable, whose terminations are dependent on both the IntelligentDC Power Supply version you have, as well as the input board type of your IntelligentDC loudspeaker.

NOTE: The MPS-482HP has similar internal resistance values. However, it has only two input channels and two output channels. Input signals can be received via either XLR or Phoenix connectors, but not both for the same channel at the same time.

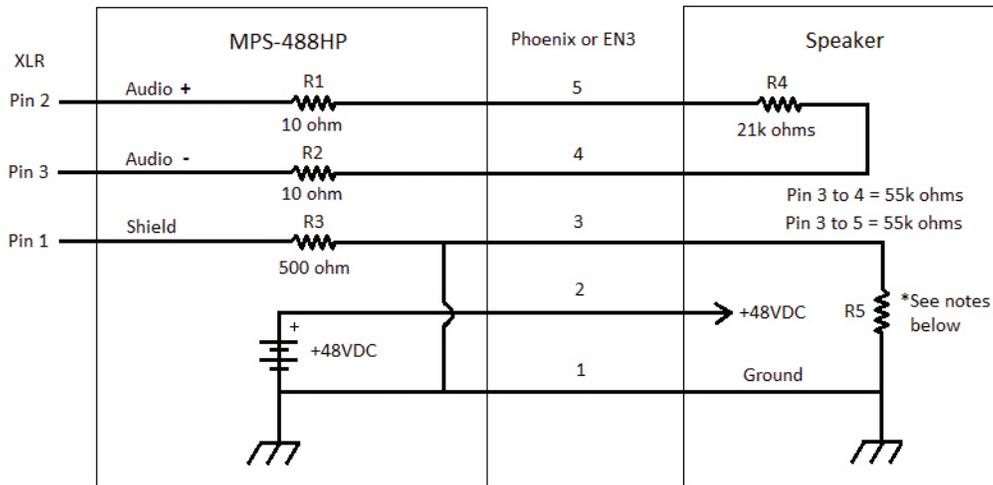


Figure 6: Power Supply to Loudspeaker Signal Flow Block Diagram

- R5 is 1 k Ω or less
- R1 and R2 are 50 Ω if the power supply was manufactured in 2014 or earlier, and 10 Ω thereafter.

System Verification

The verification process uses only the ohm (Ω) setting of your meter. An “open” refers to a reading as if the probes are not touching anything. A “short” refers to a reading as if your two probes are touching together (the meter should read 0 Ω but technically there is resistance in your probes and the reading is more like 0.2 Ω).

NOTE: All measurements are approximate due to component variances, different cable lengths, and other factors.

There are four steps to this verification process:

Step 1—Verifying the IntelligentDC Power Supply

Step 2—Verifying the loudspeaker

Step 3—Verifying the cable

Step 4—Verifying the loudspeaker through the cable



CAUTION: AC power to the MPS-488HP/MPS-482HP should be disconnected during the verification process.

Step 1—Verifying the IntelligentDC Power Supply

 **NOTE:** Repeat these measurements for each of the eight channels of an MPS-488HP power supply and each of the two channels of an MPS-482HP power supply.

Measure the Inputs and Outputs of the Power Supply between:

1. **Audio (+)** of the **Input Connector** and **Audio (+)** of the **Output Connector** (Figure 7).

 **NOTE:** The MPS-482HP has two input channels served by three connectors. Either the two XLRs or the one Phoenix connector may be used, but not both XLR and Phoenix at the same time for the same channel. The 6-pin Phoenix connector supports two input channels.

 **NOTE:** Units 2014 and older will be 50 Ω , anything manufactured post 2014 will be 10 Ω .

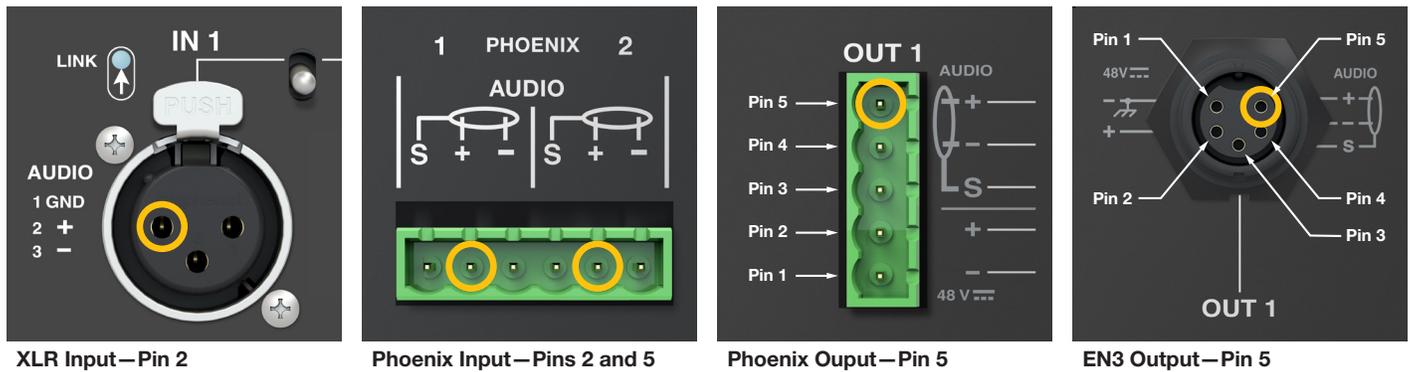


Figure 7: Audio (+) Locations on Power Supply Input and Output Connectors

2. **Audio (-)** of the **Input Connector** and **Audio (-)** of the **Output Connector** (Figure 8).

 **NOTE:** Units 2014 and older will be 50 Ω , anything manufactured post 2014 will be 10 Ω .

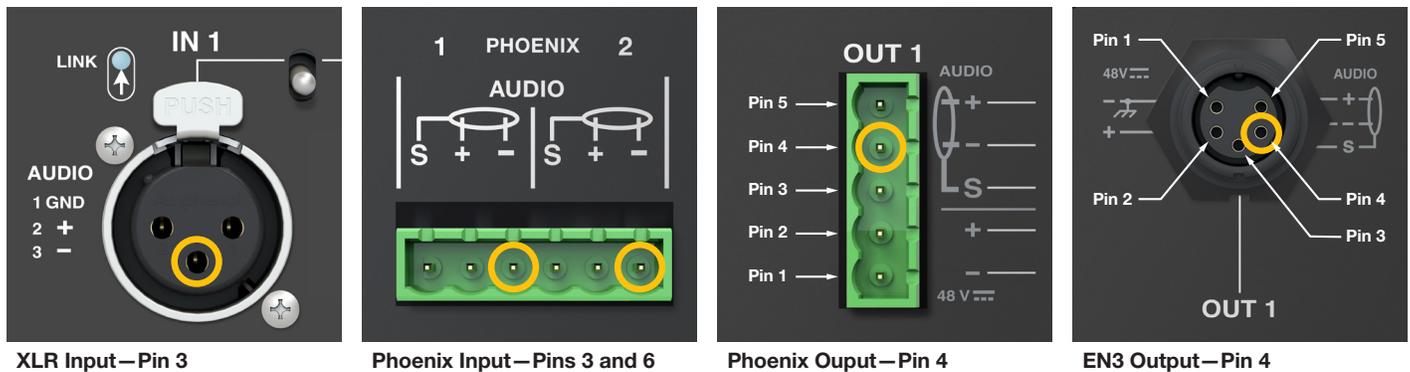


Figure 8: Audio (-) Locations on Power Supply Input and Output Connectors

3. **GND** or **Audio Shield** of the **Input Connector** and **Audio Shield** of the **Output Connector** (Figure 9).

 **NOTE:** You should read 500 Ω .

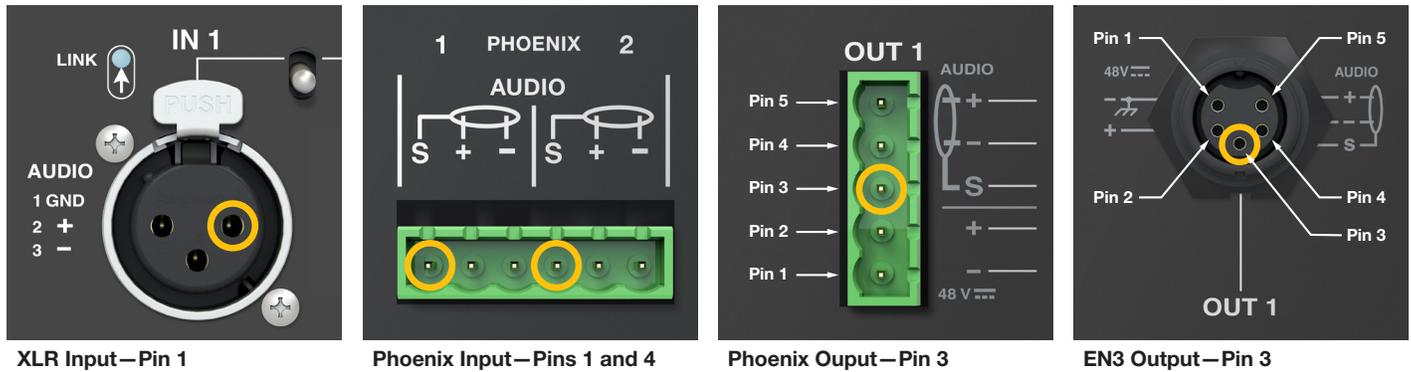


Figure 9: GND or Audio Shield Locations on Power Supply Input and Output Connectors

Step 2—Verifying the Loudspeaker Input

 **NOTE:** Electronic circuitry is involved in these measurements. One or more capacitors will be affecting your readings. The capacitor causes the reading to slowly rise as the capacitor charges from the meter. This process takes about 30 seconds or less. The important measurement is when the value stops rising.

 **NOTE:** Examples of input modules are provided on page 2 of this document for reference.

To check the input module on the loudspeaker, unplug the cable from the loudspeaker and measure at the input between:

1. **Audio (+)** and **Audio (-)**.
 - You should see 21 $k\Omega$.
2. **Audio shield** to each of the **Audio Pins**. Please allow capacitors to charge up.
 - You should see 55 $k\Omega$.
3. **48 VDC (-)** and **Audio shield**.
 - You should see 1 $k\Omega$ or less.

 **CAUTION:** If you measure larger values than indicated in the above steps, the input has likely been damaged by incorrect wiring. Contact the Meyer Sound Service department for further instructions.

Step 3—Verifying the Cable

To verify the cable:

1. Unplug both the power supply and the loudspeaker.
2. At the power supply side and following the table shown in Figure 10, keep one of your probes on the first pin and measure to each of the other pins. Next move the stationary probe to pin 2 and measure to the other pins as shown. You should not see a short between any of these pins.

Pin Number				
1	2	3	4	5
	2	3	4	5
		3	4	5
			4	5

Figure 10: Pin Measuring Order

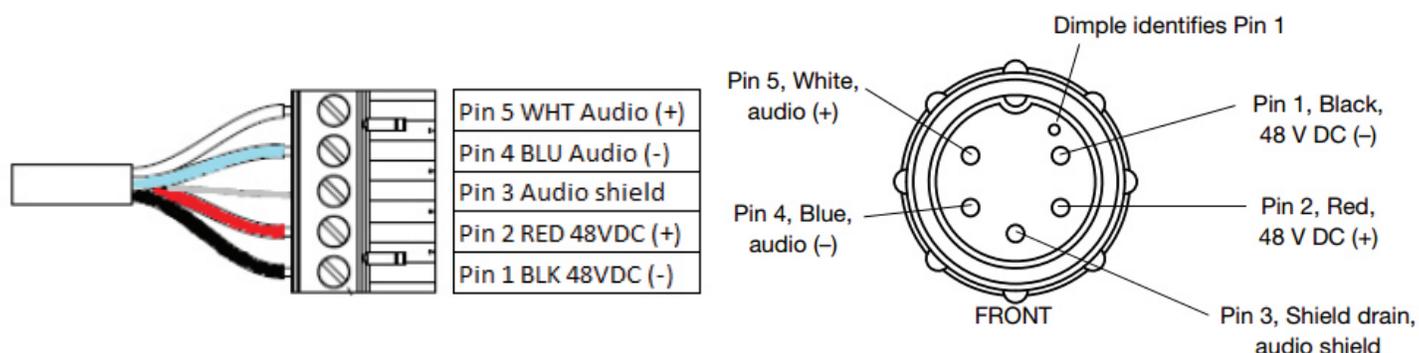


Figure 11: Phoenix Connector Pinout (left) and EN3 Connector Pinout (right)



NOTE: The same measurements must be taken on the loudspeaker end.



CAUTION: Pay close attention to the polarity of both the audio pins and the voltage pins. The positive 48 V DC pin, pictured in red in Figure 11 (left), must go to pin 2 only to avoid damaging your sound system.

Step 4—Verifying the Loudspeaker Input Through the Cable

To verify the loudspeaker through the cable, plug the cable into the loudspeaker, and measure the cable at the power supply side (see Figure 11 for the connector pinouts).



NOTE: If the cable has been wired incorrectly, the measurement will be a random number or a negative number.

Measure the cable between:

1. **Pin 4 and Pin 5—blue and white wires.**
 - You should see approximately 21 k Ω .
2. **Pin 3 and Pin 4—shield and blue wires.**
 - You should see approximately 55 k Ω .
3. **Pin 3 and Pin 5—shield and white wires.**
 - You should see approximately 55 k Ω .
4. **Pin 1 and Pin 3—48 VDC (-) and Audio shield.**
 - You should see 1 k Ω or less.

Ashby Ceiling Loudspeakers

Ashby Ceiling Loudspeakers can be looped using the Phoenix 5-pin connectors on the power and input panel (Figure 12). Up to 3 Ashby-5C loudspeakers (2 looped), up to 2 Ashby-8C loudspeakers (1 looped), or 1 Ashby-8C plus 1 Ashby-5C may be driven from a single IntelligentDC Power Supply channel.

When connecting Ashby loudspeakers:

- Follow the procedure described in “Step 1—Verifying the IntelligentDC Power Supply” on page 5.
- Follow the procedure described in “Step 2—Verifying the Loudspeaker Input” on page 6.
- Follow the procedure described in “Step 3—Verifying the Cable” on page 7. Be sure to also verify the cables to be used for looping between loudspeakers.
- Follow the procedure described in “Step 4—Verifying the Loudspeaker Input Through the Cable” above on this page.



NOTE: For Ashby ceiling loudspeakers that are looped together, the measured value of the loudspeaker input differs from what is stated in Step 4. Each additional loudspeaker in the loop lowers the expected resistance. With two loudspeakers in the loop, you should expect resistance values to be half of what is stated in Step 4. With three loudspeakers in the loop, you should expect resistance values to be one third of what is stated in Step 4.

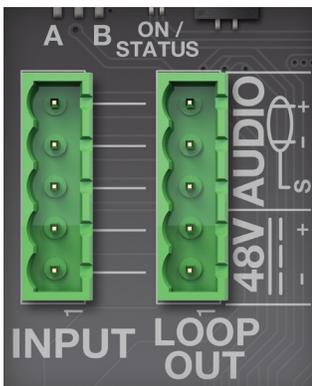


Figure 12: Ashby Loudspeaker Input Panel

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