

HMS-10™ Surround Loudspeaker



THX
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DECLARATION OF CONFORMITY ACCORDING TO ISO/IEC GUIDE 22 AND EN 45014

Manufacturer's Name: Meyer Sound Laboratories Inc.

Manufacturer's Address: 2832 San Pablo Avenue
Berkeley, CA 94702-2204, USA

Declares that the product:

Product Names: HMS-10 Cinema Surround Loudspeaker

Product Options: All

Conforms to the following Product Specifications:

Safety: EN 60065:2002

EMC: EN55103-1: 1997 emission¹
EN55103-2: 1997 immunity²

This device also complies with EN 55103-1 & -2. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Supplementary Information: The product herewith complies with the requirements of the Low Voltage Directive (LVD) 2006/95/EC and the EMC Directive 2004/108/EC.

Signature:



Director of Quality
Meyer Sound Laboratories Inc.
Berkeley, California 94702 USA
Issued June 2, 2009

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Your local Meyer Sound dealer or
Meyer Sound Germany, GmbH.

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HMS-10 Operating Instructions, PN 05.198.011.01 B

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SYMBOLS USED

These symbols indicate important safety or operating features in this booklet and on the chassis:

			
Dangerous voltages: risk of electric shock	Important operating instructions	Frame or chassis	Protective earth ground
Pour indiquer les risques résultant de tensions dangereuses	Pour indiquer important instructions	Masse, châssis	Terre de protection
Warnung vor gefährlicher elektrischer Spannung	Wichtige Betriebsanweisung oder Gebrauchsanleitung	Rahmen oder Gehäuse	Masse Schutzleiter
Para indicar voltajes peligrosos	Instrucciones importantes de funcionamiento y/o mantenimiento	Armadura o chasis	Tierra proteccionista

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this loudspeaker near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with Meyer Sound's installation instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
9. Do not defeat the safety purpose of the grounding-type plug. A grounding type plug has two blades and a third grounding prong. The third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the loudspeaker. The AC mains plug or appliance coupler shall remain readily accessible for operation.
11. Only use attachments/accessories specified by Meyer Sound.
12. If applicable, use only with the caster rails or rigging specified by Meyer Sound, or sold with the loudspeaker. Handles are for carrying only.
 **CAUTION:** Rigging should only be done by experienced professionals.
13. Unplug this loudspeaker during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the loudspeaker has been damaged in any way, such as when the power-supply cord or plug has been damaged; liquid has been spilled or objects have fallen into the loudspeaker; rain or moisture has entered the loudspeaker; the loudspeaker has been dropped; or when for undetermined reasons the loudspeaker does not operate normally.

SAFETY SUMMARY

English

- To reduce the risk of electric shock, disconnect the loudspeaker from the AC mains before installing audio cable. Reconnect the power cord only after making all signal connections.
- Connect the loudspeaker to a two-pole, three-wire grounding mains receptacle. The receptacle must be connected to a fuse or circuit breaker. Connection to any other type of receptacle poses a shock hazard and may violate local electrical codes.
- Do not install the loudspeaker in wet or humid locations without using weather protection equipment from Meyer Sound.
- Do not allow water or any foreign object to get inside the loudspeaker. Do not put objects containing liquid on or near the unit.
- To reduce the risk of overheating the loudspeaker, avoid exposing it to direct sunlight. Do not install the unit near heat-emitting appliances, such as a room heater or stove.
- This loudspeaker contains potentially hazardous voltages. Do not attempt to disassemble the unit. The unit contains no user-serviceable parts. Repairs should be performed only by factory-trained service personnel.

Français

- Pour réduire le risque d'électrocution, débrancher la prise principale de l'haut-parleur, avant d'installer le câble d'interface allant à l'audio. Ne rebrancher le bloc d'alimentation qu'après avoir effectué toutes les connexions.
- Branchez l'haut-parleur dans une prise de courant à 3 dérivations (deux pôles et la terre). Cette prise doit être munie d'une protection adéquate (fusible ou coupe-circuit). Le branchement dans tout autre genre de prise pourrait entraîner un risque d'électrocution et peut constituer une infraction à la réglementation locale concernant les installations électriques.

- Ne pas installer l'haut-parleur dans un endroit où il y a de l'eau ou une humidité excessive.
- Ne pas laisser de l'eau ou tout objet pénétrer dans l'haut-parleur. Ne pas placer de récipients contenant un liquide sur cet appareil, ni à proximité de celui-ci.
- Pour éviter une surchauffe de l'haut-parleur, conserver-la à l'abri du soleil. Ne pas installer à proximité d'appareils dégageant de la chaleur tels que radiateurs ou appareils de chauffage.
- Ce haut-parleur contient des circuits haute tension présentant un danger. Ne jamais essayer de le démonter. Il n'y a aucun composant qui puisse être réparé par l'utilisateur. Toutes les réparations doivent être effectuées par du personnel qualifié et agréé par le constructeur.

Deutsch

- Um die Gefahr eines elektrischen Schlages auf ein Minimum zu reduzieren, den Lautsprecher vom Stromnetz trennen, bevor ggf. ein Audio-Schnittstellensignalkabel angeschlossen wird. Das Netzkabel erst nach Herstellung aller Signalverbindungen wieder einstecken.
- Der Lautsprecher an eine geerdete zweipolige Dreiphasen-Netzsteckdose anschließen. Die Steckdose muß mit einem geeigneten Abzweigschutz (Sicherung oder Leistungsschalter) verbunden sein. Der Anschluß der unterbrechungsfreien Stromversorgung an einen anderen Steckdosentyp kann zu Stromschlägen führen und gegen die örtlichen Vorschriften verstoßen.
- Der Lautsprecher nicht an einem Ort aufstellen, an dem sie mit Wasser oder übermäßig hoher Luftfeuchtigkeit in Berührung kommen könnte.
- Darauf achten, daß weder Wasser noch Fremdkörper in das Innere den Lautsprecher eindringen. Keine Objekte, die Flüssigkeit enthalten, auf oder neben die unterbrechungsfreie Stromversorgung stellen.

- Um ein Überhitzen dem Lautsprecher zu verhindern, das Gerät vor direkter Sonneneinstrahlung fernhalten und nicht in der Nähe von wärmeabstrahlenden
- Haushaltsgeräten (z.B. Heizgerät oder Herd) aufstellen.
- Im Inneren diesem Lautsprecher herrschen potentiell gefährliche Spannungen. Nicht versuchen, das Gerät zu öffnen. Es enthält keine vom Benutzer reparierbaren Teile. Reparaturen dürfen nur von ausgebildetem Kundendienstpersonal durchgeführt werden.

Español

- Para reducir el riesgo de descarga eléctrica, desconecte de la red de voltaje el altoparlante antes de instalar el cable de señal de audio. Vuelva a conectar la alimentación de voltaje una vez efectuadas todas las interconexiones de señalización de audio.
- Conecte el altoparlante a un tomacorriente bipolar y trifilar con neutro de puesta a tierra. El tomacorriente debe estar conectado a la protección de derivación apropiada (ya sea un fusible o un disyuntor). La conexión a cualquier otro tipo de tomacorriente puede constituir peligro de descarga eléctrica y violar los códigos eléctricos locales.
- No instale el altoparlante en lugares donde haya agua o humedad excesiva.
- No deje que en el altoparlante entre agua ni ningún objeto extraño. No ponga objetos con líquidos encima de la unidad ni cerca de ella.
- Para reducir el riesgo de sobrecalentamiento, no exponga la unidad a los rayos directos del sol ni la instale cerca de artefactos que emiten calor, como estufas o cocinas.
- Este altoparlante contiene niveles de voltaje peligrosos en potencia. No intente desarmar la unidad, pues no contiene piezas que puedan ser reparadas por el usuario. Las reparaciones deben efectuarse únicamente por parte del personal de mantenimiento capacitado en la fábrica.

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CHAPTER 1: INTRODUCTION

HOW TO USE THIS MANUAL

Make sure to read these operating instructions in their entirety before configuring a loudspeaker system with HMS-10s. In particular, pay close attention to material related to safety issues.

As you read these operating instructions, you will encounter the following icons for notes, tips, and cautions:



NOTE: A note identifies an important or useful piece of information relating to the topic under discussion.



TIP: A tip offers a helpful tip relevant to the topic at hand.



CAUTION: A caution gives notice that an action may have serious consequences and could cause harm to equipment or personnel, or could cause delays or other problems.

Information and specifications are subject to change. Updates and supplementary information are available at www.meyersound.com.

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- **Web:** www.meyersound.com/support
- **Email:** techsupport@meyersound.com

HMS-10 SURROUND LOUDSPEAKER

Meyer Sound's HMS-10™ is a full-range, two-way loudspeaker optimized for surround channels in cinemas, theatres, and re-recording stages. The self-powered HMS-10 maintains a wide dynamic range, full fidelity, and complete clarity during the most demanding of digital soundtracks. As part of the EXP line of cinema products, the HMS-10 is optimized for use with other EXP loudspeakers, including the Acheron® screen channel loudspeakers. Boasting a wide frequency range of 55 Hz to 18 kHz and a maximum peak SPL of 126 dB at 1 meter with very low distortion, the HMS-10 ensures that the full intensity and nuance of cinema surround channels reach each listener without compromise.



HMS-10 Surround Loudspeaker (Shown without Grille)

The HMS-10's transducers include a 10-inch low-frequency long excursion cone driver and a 2-inch diaphragm high-frequency compression driver on a symmetrical constant-directivity 80-degree horn that delivers exceptional coverage. The proprietary drivers — designed and manufactured at Meyer Sound's headquarters in Berkeley, California — are powered by two channels of onboard amplification that include an active crossover, driver protection, and frequency and phase response correction circuitry.

Balanced audio and DC power are received by the HMS-10 from a Phoenix™ 5-pin male connector on its top panel. Powering the unit from an external source eliminates the need for wiring conduits while still preserving the advantages of self-powered loudspeaker systems. The HMS-10's amplifier and signal-processing circuits store DC power and tolerate voltage drops, thereby accommodating light-gauge cables and lengthy cable runs.

HMS-10 loudspeakers require a Meyer Sound 48 V DC external power supply, such as the MPS-488HP. The single-space 19-inch rack unit receives eight channels of balanced audio from its XLR female Channel Inputs and routes the audio, along with 48 V of DC power, to its eight Channel Outputs. The Channel Outputs, which are available as Phoenix 5-pin male connectors, deliver DC power to up to eight HMS-10 loudspeakers at cable lengths up to 150 feet with just 1 dB of loss in peak SPL using 18 AWG wire. The use of composite multiconductor cables (such as Belden® 1502 or equivalent) allows a single cable to carry both DC power and balanced audio to the HMS-10. Longer cable runs are possible for moderate applications that don't drive the loudspeakers to maximum output, or for installations using heavier wire gauges.



MPS-488HP External Power Supply



TIP: For complete information on using the MPS-488HP external power supply, refer to the *MPS-488HP Operating Instructions*.



NOTE: The MPS-488HP external power supply replaces the MPS-488 model, which was originally designed for use with MM-4XP loudspeakers. The MPS-488 is also compatible with HMS-10 loudspeakers and can drive up to four units (using every other Channel Output).

Meyer Sound's industry standard self-powered loudspeaker technology not only delivers unparalleled and consistent audio fidelity but also simplifies installation, whether designing a new room from scratch or adding surround channels to an existing setup.

The HMS-10's compact size, textured finish, and black cloth grille blend smartly with any theater decor. The HMS-10 comes standard with a fixed bracket; an optional adjustable bracket is also available for wall mounting the HMS-10 with downtilt or uptilt.



HMS-10 with Fixed Mount Bracket



HMS-10 with Adjustable Mount Bracket

CHAPTER 2: HMS-10 LOUDSPEAKER

HMS-10 INPUT CONNECTOR

The HMS-10 receives DC power and balanced audio from its Phoenix 5-pin male connector on the top panel. The connector's five pins include two pins for DC power (negative and positive) and three pins for balanced audio (shield, negative, and positive). These pins are clearly labeled on the HMS-10 top panel. The connector accepts conductors up to 12 AWG (American Wire Gauge) or 2.5 mm². To function properly, the HMS-10 requires an external 48 V DC power supply.



HMS-10 Input Connector

A single composite cable (such as Belden 1502 or equivalent) can be used to route both DC power and balanced audio to the HMS-10 loudspeaker.

Each HMS-10 loudspeaker comes with one Phoenix 5-pin female cable connector for making loudspeaker cables. For information on HMS-10 cable requirements, see “HMS-10 Current Draw and Cable Requirements” on page 9. For information on cables and cable accessories available from Meyer Sound, see Appendix A, “HMS-10 Accessories.” For information on cable assembly, see Appendix B, “HMS-10 Cable Assembly.”

CAUTION: When wiring HMS-10 loudspeaker cables, it is extremely important that each pin be wired correctly. Make sure the 48 V DC from the external power supply is wired directly (and only) to the 48 V DC pins on the HMS-10 loudspeaker connector, and that the polarity is observed (negative to negative, positive to positive) to avoid damage to the loudspeaker. In addition, make sure that audio pins are wired correctly; polarity reversals for audio signals affect system performance.

HMS-10 CURRENT DRAW AND CABLE REQUIREMENTS

Each HMS-10 loudspeaker draws a maximum current of 3.31 A rms and 3.45 A peak from its external 48 V DC power supply. The current draw for the HMS-10 is dynamic and fluctuates as operating levels change. The cabling between the HMS-10 and its external power supply adds resistance and hence causes a voltage drop at the loudspeaker. Because lower voltages compromise peak SPL, and in some cases frequency response, cable resistance should be minimized.

NOTE: For long cable runs, you can use a large cable gauge for DC power and a separate balanced audio cable for audio.

Cable Lengths and Cable Gauges for HMS-10 Loudspeakers

Cable lengths of up to 150 feet between the HMS-10 and its external power are supported with only 1 dB of peak SPL loss when using 18 AWG wire. Longer cable lengths are possible with heavier wire gauges (see Table 1 and Table 2).

Table 1: HMS-10 Loudspeaker Cable Lengths (AWG)

Cable Gauge	Resistance (Ω/ft)	Approximate Max. Length
12 AWG	0.0016	600 ft
14 AWG	0.00253	375 ft
16 AWG	0.00402	237 ft
18 AWG	0.00636	150 ft
20 AWG	0.01008	87 ft

Table 2: HMS-10 Loudspeaker Cable Lengths (European)

Cable Gauge	Resistance (Ω/m)	Approximate Max. Length
2.50 mm ²	0.0052	157 m
1.50 mm ²	0.01076	87 m
1.00 mm ²	0.02087	45 m
0.75 mm ²	0.03307	27 m

NOTE: The total cable resistance between the HMS-10 and its external power supply should not exceed 2 ohms.

Calculating the Maximum Cable Length

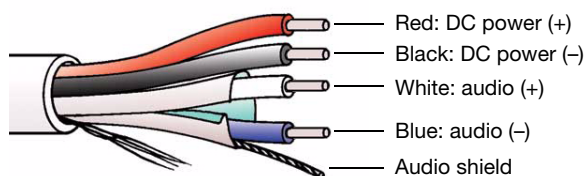
The maximum cable length for an HMS-10 can be calculated with the following formula:

$$\text{maximum length} = 2 \text{ ohms} / 2 * \text{cable resistance}$$

For example, the maximum length of an 18 AWG cable with a resistance of 0.00636 is 157.2 feet ($2 / 2 * 0.00636$).

WIRING HMS-10 LOUDSPEAKER CABLES WITH BELDEN 1502 CABLE (OR EQUIVALENT)

When wiring HMS-10 loudspeaker cables with Belden 1502 cable, use the conventions in Table 3. The red and black wires in the Belden 1502 cable have a thicker gauge than the other three wires and should be used for DC power. The blue, white, and shield wires are shielded together and should be used for audio.



Belden 1502 Composite Cable

Table 3: Wiring HMS-10 Loudspeaker Cables with Belden 1502

Wire	Gauge	Gauge
Red	DC power, positive (+)	18 AWG
Black	DC power, negative (-)	18 AWG
White	Balanced audio, positive (+)	22 AWG
Blue	Balanced audio, negative (-)	22 AWG
Shield	Balanced audio, shield	24 AWG



CAUTION: When wiring HMS-10 loudspeaker cables, it is extremely important that each pin be wired correctly. Make sure the 48 V DC from the external power supply is wired directly (and only) to the 48 V DC pins on the HMS-10 loudspeaker connector, and that the polarity is observed (negative to negative, positive to positive) to avoid damage to the loudspeaker. In addition, make sure that audio pins are wired correctly; polarity reversals for audio signals affect system performance.

CHAPTER 3: POWERING HMS-10 LOUDSPEAKERS

CONNECTING HMS-10 LOUDSPEAKERS TO THE MPS-488HP EXTERNAL POWER SUPPLY

HMS-10 loudspeakers require a Meyer Sound 48 V DC external power supply, such as the MPS-488HP. The single-space 19-inch rack unit receives eight channels of balanced audio from its XLR female Channel Inputs and routes the audio, along with 48 V of DC power, to its eight Channel Outputs. The Channel Outputs, which are available as Phoenix 5-pin male connectors, deliver DC power to up to eight HMS-10 loudspeakers at cable lengths up to 150 feet with just 1 dB of loss in peak SPL using 18 AWG wire. The use of composite multiconductor cables (such as Belden 1502 or equivalent) allows a single cable to carry both DC power and balanced audio to the HMS-10. Longer cable runs are possible for moderate applications that don't drive the loudspeakers to maximum output, or for installations using heavier wire gauges.



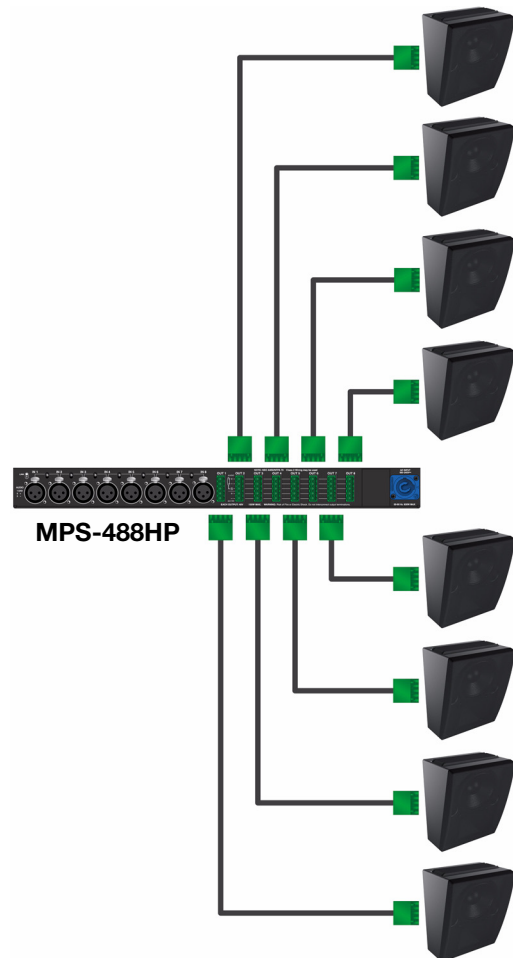
TIP: For complete information on using the MPS-488HP external power supply, refer to the *MPS-488HP Operating Instructions*.

To connect HMS-10 loudspeakers to the MPS-488HP:

1. Power off the MPS-488HP.
2. Connect audio sources (from a mixer or processor) to the MPS-488HP Channel Inputs. Use balanced XLR cables.
3. Use the MPS-488HP Link switches to route Channel Inputs to the desired Channel Outputs. For information on the MPS-488HP Link switches, refer to the *MPS-488HP Operating Instructions*.
4. Connect the HMS-10 loudspeakers to the MPS-488HP Channel Outputs. Use a composite cable (such as Belden 1502 or equivalent) outfitted with Phoenix connectors and wired for both DC power and balanced audio.



CAUTION: Make sure HMS-10 loudspeaker cables are wired correctly. For details on assembling loudspeaker cables, see Appendix B, “HMS-10 Cable Assembly.”



MPS-488HP with Eight HMS-10 Loudspeakers

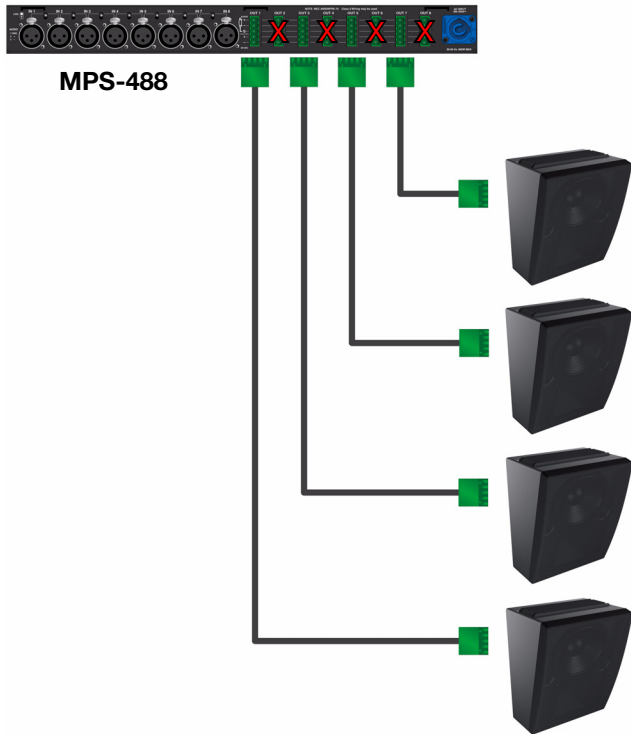


TIP: You can use two separate cables for HMS-10 loudspeaker connections: a 2-conductor cable for DC power and a 3-conductor cable for balanced audio, both attached to a single Phoenix connector on each cable end. This allows you to use a larger gauge for the DC cable so you can achieve longer cable runs (see “Cable Lengths and Cable Gauges for HMS-10 Loudspeakers” on page 9).

5. Power on the MPS-488HP and monitor the LEDs on the front panel to verify connections. For information on the MPS-488HP LEDs, refer to the *MPS-488HP Operating Instructions*.
6. Enable output from the audio sources (from the mixer or processor) connected to the MPS-488HP.

CONNECTING HMS-10 LOUDSPEAKERS TO THE MPS-488 EXTERNAL POWER SUPPLY

The original MPS-488 was designed for use with the MM-4XP miniature loudspeaker. While the MPS-488 can power up to eight MM-4XP loudspeakers, it can only power up to four HMS-10 loudspeakers (due to the HMS-10's higher power requirements and current draw).



MPS-488 with Four HMS-10 Loudspeakers

Because the MPS-488 can power a maximum of four HMS-10 loudspeakers, the loudspeakers should only be connected to Channel Outputs 1, 3, 5, and 7. Do not use the even-numbered channel outputs.



NOTE: The MPS-488HP external power supply replaces the MPS-488 model, which was originally designed for use with MM-4XP loudspeakers. The MPS-488 is also compatible with HMS-10 loudspeakers and can drive up to four units (using every other Channel Output).

CHAPTER 4: MOUNTING HMS-10 LOUDSPEAKERS

The HMS-10 comes standard with a fixed bracket; an adjustable bracket is also available for wall mounting the HMS-10 with downtilt or uptilt. This chapter describes how to mount the HMS-10 with these two mounting options.

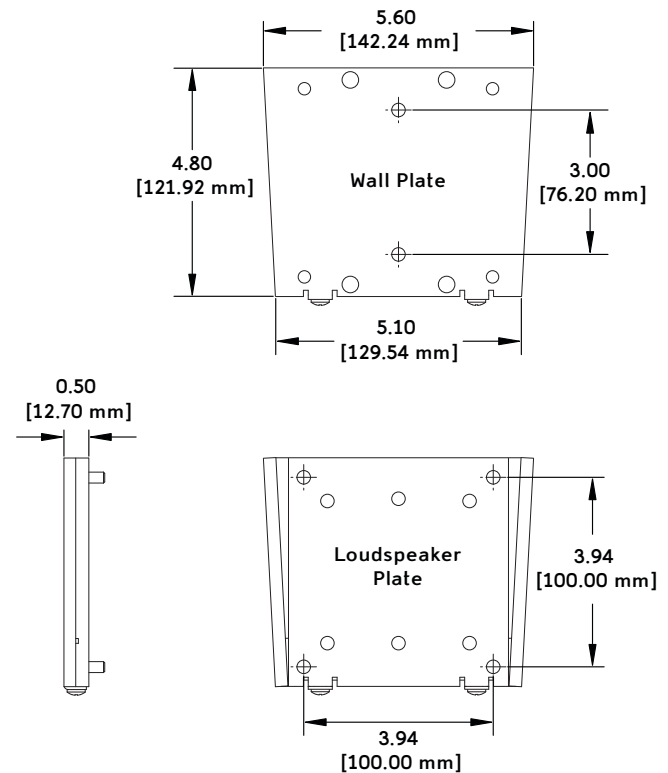
IMPORTANT SAFETY CONSIDERATIONS

When installing Meyer Sound loudspeakers, the following precautions should always be observed:

- All Meyer Sound products must be used in accordance with local, state, federal, and industry regulations. It is the owner's and user's responsibility to evaluate the reliability of any rigging or mounting method for their application. Rigging should only be carried out by experienced professionals.
- Use mounting and rigging hardware that has been rated to meet or exceed the weight being hung.
- Make sure to attach mounting hardware to the building's structural components (studs or joists), and not just to the wall surface. Verify that the building's structure and the anchors used for the installation will safely support the total weight of the mounted loudspeakers.
- Use mounting hardware appropriate for the surface where the loudspeaker will be installed.
- Make sure bolts are tightened securely. Meyer Sound recommends using Loctite® on bolt threads and safety cables.
- Inspect mounting and rigging hardware regularly. Immediately replace any worn or damaged components.

MOUNTING HMS-10 LOUDSPEAKERS WITH THE FIXED MOUNT BRACKET

The HMS-10 can be mounted with a fixed mount bracket at a fixed angle of 0 degrees. The low profile bracket allows the HMS-10 to be mounted less than 0.6" (15 mm) from the wall.



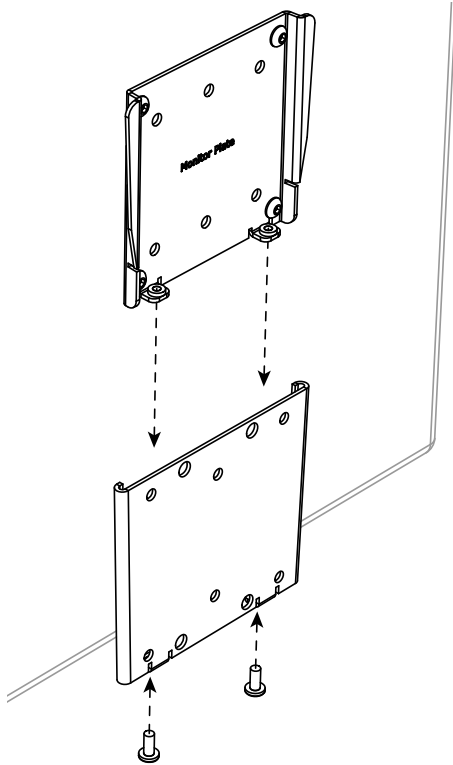
Fixed Bracket (OmniMount 17FM-F)



NOTE: When ordering the HMS-10 with the fixed mount bracket, the bracket is factory installed and already attached to the loudspeaker.

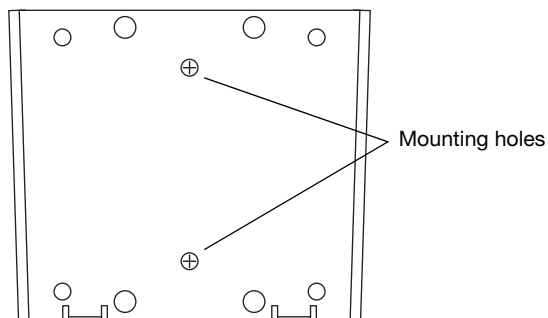
To mount the HMS-10 with the fixed mount bracket:

1. Disassemble the fixed bracket by removing the two bottom screws. Separate the wall plate from the loudspeaker plate (labeled “Monitor”). Leave the loudspeaker plate attached to the HMS-10.



2. Choose one of the following mounting options:

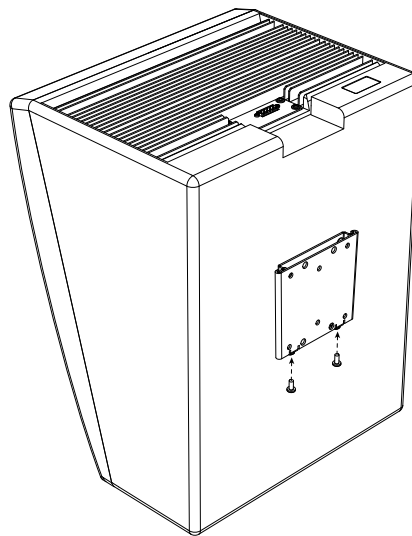
- To mount the HMS-10 on a wall with a wood stud:
 - Locate the wall stud and mark two holes on the wall using the wall plate’s center holes as a guide.



- Drill two 1/8” pilot holes, 2.0 inches deep, at the marked locations.
- Secure the wall plate to the wall with the two wood screws.

- To mount the HMS-10 on a concrete wall:

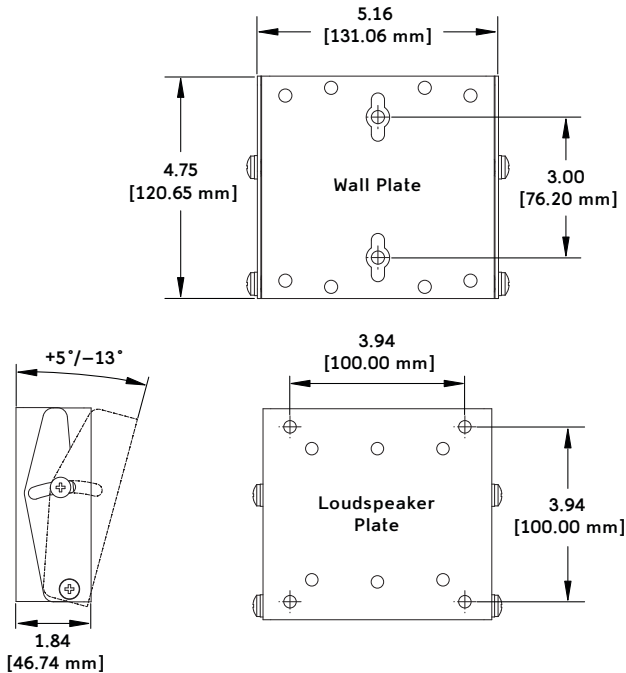
- Mark two mounting holes on the wall using the wall plate’s center holes as a guide.
 - Drill two 5/16” pilot holes, 2.5 inches deep, at the marked locations.
 - Install the wall anchors in the pilot holes so they are flush with the wall surface.
 - Secure the wall plate to the wall with the wood screws.
3. Hang the HMS-10 on the wall by carefully sliding the loudspeaker plate (attached to the HMS-10) down into the wall plate’s grooves.
 4. For additional stability, secure the loudspeaker plate to the wall plate with the two bottom screws previously removed.



NOTE: When mounting the HMS-10 in a soffit, allow at least 3 inches above the unit for the mounting bracket to slide into place. The extra space also provides the necessary ventilation for the HMS-10’s amplifier and heat sink.

MOUNTING HMS-10 LOUDSPEAKERS WITH THE ADJUSTABLE MOUNT BRACKET

The HMS-10 can be wall mounted with the adjustable mount bracket at downtilt angles up to 13 degrees and uptilt angles up to 5 degrees (uptilt).



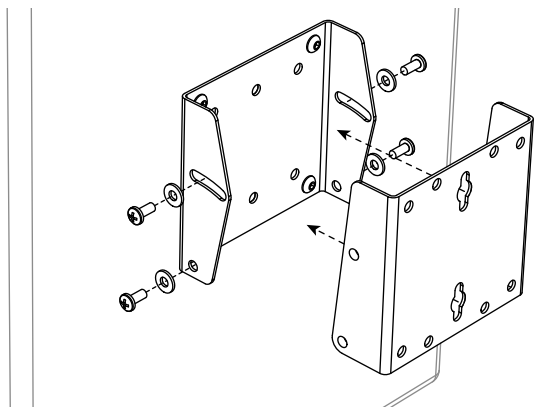
Adjustable Bracket (OmniMount 17FM-T)



NOTE: When ordering the HMS-10 with the adjustable mount bracket, the bracket is factory installed and already attached to the loudspeaker.

To mount the HMS-10 with the adjustable mount bracket:

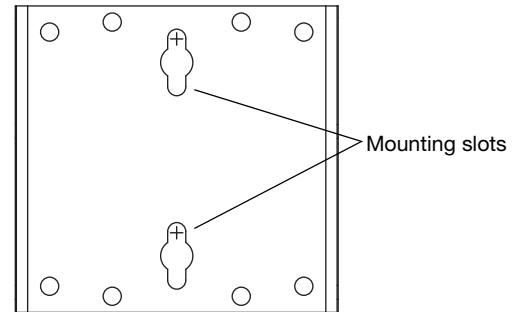
1. Disassemble the adjustable bracket by removing the four side screws and washers. Separate the wall plate from the loudspeaker plate (labeled "Monitor"). Leave the loudspeaker plate attached to the HMS-10.



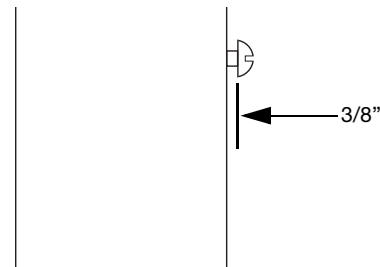
2. Choose one of the following mounting options:

■ To mount the HMS-10 on a wall with a wood stud:

- Locate the stud and mark two mounting holes on the wall using the wall plate's center mounting slots as a guide.



- Drill two 1/8" pilot holes, 2.0 inches deep, at the marked locations.
- Install the wood screws in the pilot holes. Leave the screws extended approximately 3/8" from the wall surface.




■ To mount the HMS-10 on a concrete wall:

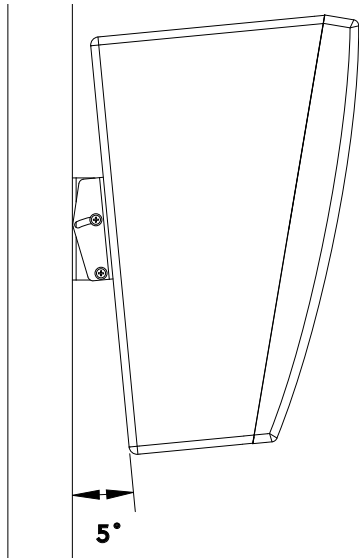
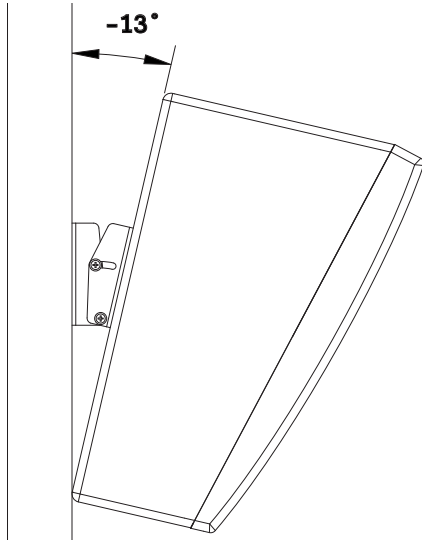
- Mark two mounting holes on the wall using the wall plate's center mounting slots as a guide.
- Drill two 5/16" pilot holes, 2.5 inches deep, at the marked locations.
- Install the wall anchors in the pilot holes so they are flush with the wall surface.
- Install the wood screws in the wall anchors. Leave the screws extended approximately 3/8" from the wall surface.


3. Reattach the wall plate to the loudspeaker plate with the previously removed four washers and screws. The washers should be placed on the outside of the loudspeaker plate.


4. Hang the mounting bracket, with the HMS-10 attached, on the wall screws.

- Adjust the tilt of the HMS-10 from -13 degrees (downtilt) to $+5$ degrees (uptilt). Tighten the four side screws to secure the HMS-10.

 **NOTE:** Make sure the four side screws are completely tightened to ensure that the HMS-10 won't move from its desired position.

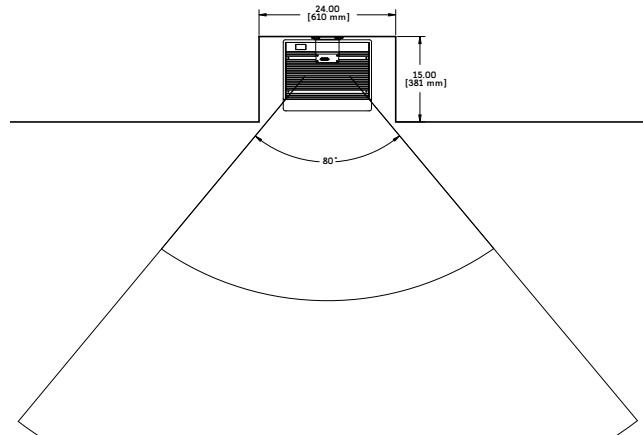


 **TIP:** If more than 5 degrees of uptilt are needed for the HMS-10, the adjustable bracket can be oriented upside down (mount the wall plate on the wall upside down and remove and reattach the loudspeaker plate to the HMS-10 also upside down). This orientation allows uptilt angles up to 13 degrees.

 **NOTE:** When mounting the HMS-10 in a soffit, allow at least 3 inches above the unit to provide the necessary ventilation for its amplifier and heat sink.

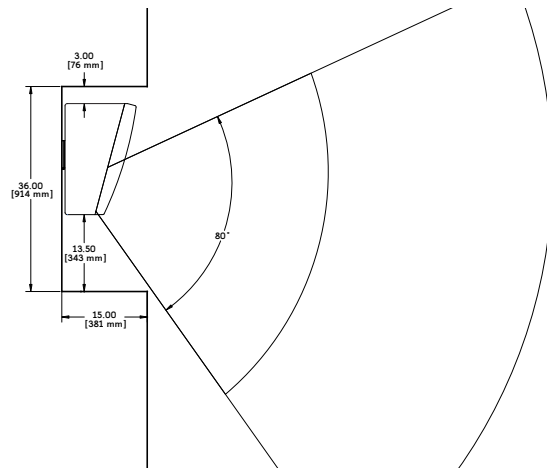
MOUNTING HMS-10 LOUDSPEAKERS IN SOFFITS

When mounting the HMS-10 in a soffit, use a soffit that measures at least 24" wide by 36" high by 15" deep (610 mm x 914 mm x 381 mm). This ensures that the loudspeaker's full 80-degree horizontal by 80-degree vertical horn coverage will reach the listener. If the soffit is deeper than 15", or the HMS-10 is angled down, the overall height of the soffit should be increased to accommodate the horn's vertical coverage.



HMS-10 in Soffit, Top View

In addition, make sure to allow at least 3 inches above the HMS-10 for the mounting bracket to slide into place. The extra space also provides the necessary ventilation for the unit's amplifier and heat sink.



HMS-10 in Soffit, Side View

APPENDIX A: HMS-10 ACCESSORIES

The following HMS-10 accessories are available from Meyer Sound.

HMS-10 Accessories

Part Number	Accessory	Notes
09.183.001.01	MPS-488HPp external power supply (with US power cord)	Channel Outputs equipped with Phoenix 5-pin male connectors
09.183.001.02	MPS-488HPp external power supply (with CE power cord)	
484.065	Phoenix 5-pin female cable mount connector	Connects to MPS-488HPp Channel Output connectors and HMS-10 Input connectors
524.014	Bulk cable, no connectors (regular)	500-ft spool, black
524.015	Bulk cable, no connectors (plenum)	500-ft spool, white



NOTE: The MPS-488HP external power supply replaces the MPS-488 model, which was originally designed for use with MM-4XP loudspeakers. The MPS-488 is also compatible with HMS-10 loudspeakers and can drive up to four units (using every other Channel Output).



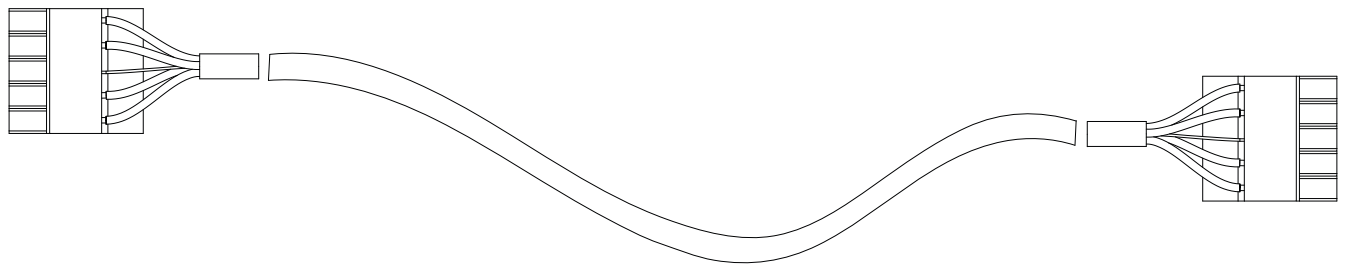
NOTE: Bulk cables use Belden 1502R (regular) or Belden 1502P (plenum) cable. Belden 1502 is a composite cable comprised of two 18 AWG wires for DC power, two 22 AWG wires for balanced audio, and one 24 AWG wire for audio shield. This single cable can deliver both DC power and balanced audio to loudspeakers at cable runs of up to 150 feet with only 1 dB of loss in peak SPL. Longer cable runs are possible with heavier gauges for DC power and separate cables for balanced audio. For more information, see “HMS-10 Current Draw and Cable Requirements” on page 9.

APPENDIX B: HMS-10 CABLE ASSEMBLY

CAUTION: When wiring HMS-10 loudspeaker cables, it is extremely important that each pin be wired correctly. Make sure the 48 V DC from the external power supply is wired directly (and only) to the 48 V DC pins on the HMS-10 loudspeaker connector, and that the polarity is observed (negative to negative, positive to positive) to avoid damage to the loudspeaker. In addition, make sure that audio pins are wired correctly; polarity reversals for audio signals affect system performance.

ASSEMBLING PHOENIX-TO-PHOENIX LOUDSPEAKER CABLES

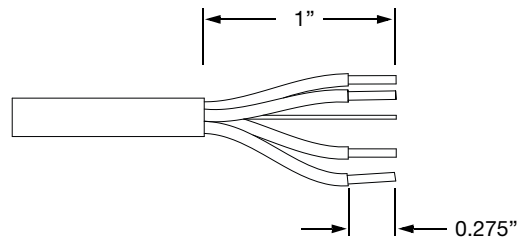
To connect the HMS-10 loudspeaker directly to the MPS-488HPp power supply, you need a Phoenix 5-pin female to Phoenix 5-pin female cable. The following procedure documents how to assemble this cable.



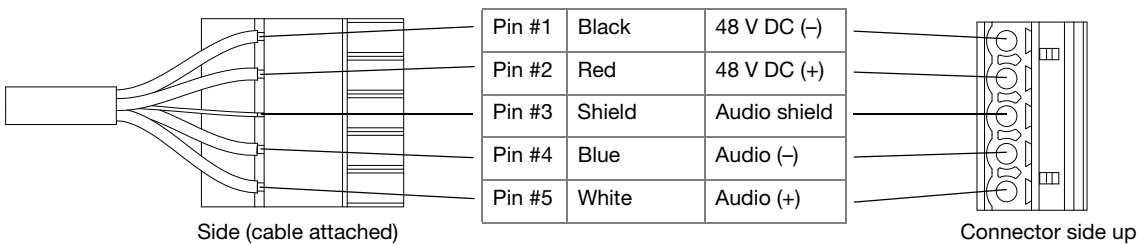
Assembled Phoenix-to-Phoenix Cable

To assemble a Phoenix-to-Phoenix cable:

1. If the cable has not yet been stripped, strip one end of the cable. Strip the outer shielding 1 inch and then strip the black, red, blue, and white wires .275 inch.

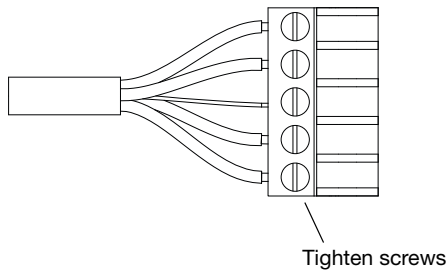


2. Insert the five exposed conductors, from one end of the cable, into the five cable holes in one of the Phoenix connectors. Use the following wiring scheme.



Phoenix 5-Pin Female Cable Mount Connector

3. Secure the conductors by tightening the five screws in the Phoenix connector.



4. Repeat the previous steps and attach the other end of the cable to the other Phoenix connector.
5. Verify the wiring polarity is correct for both connectors.

APPENDIX C: HMS-10 SPECIFICATIONS

HMS-10 Specifications

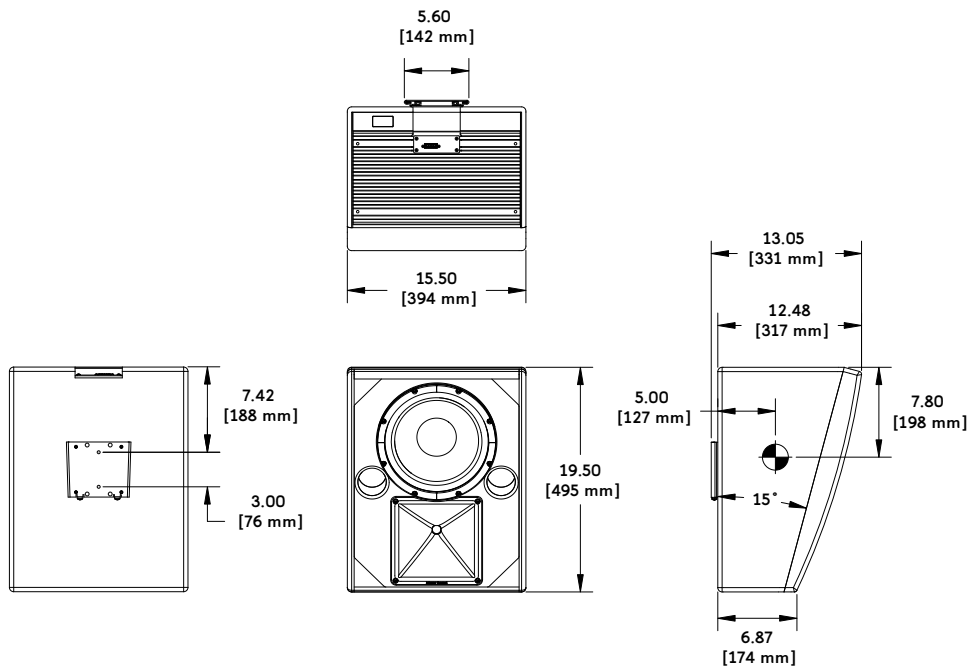
ACOUSTICAL	
Operating Frequency Range	55 Hz – 18 kHz Note: Recommended maximum operating frequency range. Response depends on loading conditions and room acoustics.
Frequency Response	58 Hz – 17.5 kHz ± 4 dB Note: Measured free-field with pink noise at 1 meter, 1/3rd octave resolution.
Maximum Peak SPL	126 dB Note: Measured free-field with music, referred to 1 meter.
Dynamic Range	100 dB Note: Taken from peak SPL, referred to A-wtd noise floor.
Phase Response	290 Hz – 18 kHz $\pm 45^\circ$
Coverage	80° symmetrical
Acoustical Crossover	2.5 kHz Note: At this frequency, the transducers produce equal sound pressure levels.
TRANSDUCERS	
Low Frequency	One 10" low-frequency long excursion cone driver
High Frequency	One 2" high-frequency diaphragm compression driver
CONNECTOR	
Audio/Power Connector	Single Phoenix 5-pin male (3 pins for balanced audio, 2 pins for DC power)
Power Wiring	Pin 1: 48 V DC – Pin 2: 48 V DC +
Audio Wiring	Pin 3: Chassis/earth through 220 k Ω , 1000 pF, 15 V clamp network to provide virtual ground lift at audio frequencies Pin 4: Signal – Pin 5: Signal +
AUDIO INPUT	
Type	Differential, electronically balanced
Maximum Common Mode Range	± 15 V DC, clamped to earth for voltage transient protection
Input Impedance	10 k Ω differential between pins 4 (–) and 5 (+)
DC Blocking	Differential DC blocking on input up to the maximum common mode voltage
CMRR	>50 dB, typically 80 dB (50 Hz – 500 Hz)
RF Filter	Common mode: 425 kHz Differential mode: 142 kHz
TIM Filter	<80 kHz, integral to signal processing
Nominal Input Sensitivity	6.0 dBV (2.0 V rms, 2.8 V peak) continuous average is typically the onset of limiting for noise and music
Input Level	Audio source must be capable of producing +16 dBV (6.3 V rms, 9.0 V peak) into 600 Ω to produce the maximum peak SPL over the operating bandwidth of the loudspeaker
AMPLIFIER	
Amplifier Type	Two-channel complementary MOSFET output stages (class AB/Bridged)

HMS-10 Specifications

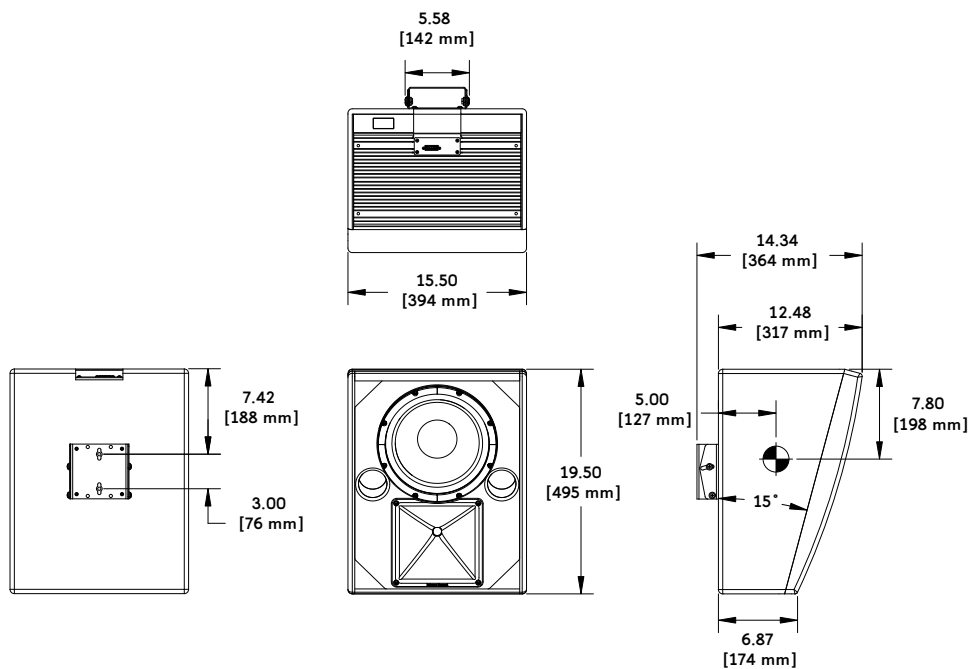
Output Power	300 W total Note: Wattage rating based on the maximum unclipped burst sine-wave rms voltage the amplifier will produce into the nominal load impedance.
THD, IM TIM	<.02%
Load Capacity	4 Ω low channel, 12 Ω high channel
Cooling	Convection
DC POWER	
Voltage Requirement	48 V DC
Current Draw	Note: At 48 V DC.
Idle Current	0.35 A rms
Maximum Long-Term Continuous Current	2.03 A rms
Burst Current	3.31 A rms
Ultimate Short-Term Peak Current	3.45 A peak
Inrush Current	4.55 A peak
PHYSICAL	
Enclosure	Multi-ply hardwood
Finish	Black textured
Protective Grille	Acoustically transparent, black cloth-covered frame
Mounting	Fixed bracket or optional adjustable bracket with 13° downtilt and 5° uptilt
Dimensions	15.5" W x 19.5" H x 12.5" D without mounting bracket (394 mm x 495 mm x 317 mm)
Weight	29.1 lbs (13.2 kg) with mounting bracket
ENVIRONMENTAL	
Operating Temperature	0° C to +45° C
Non Operating Temperature	<-40° C or >+75° C
Humidity	To 95% at 35° C
Operating Altitude	To 4600 m (15,000 ft)
Non operating Altitude	To 95% at 35° C
Shock	30 g 11 msec half-sine on each of 6 sides
Vibration	10 Hz – 55 Hz (0.010 m peak-to-peak excursion)

HMS-10 COMPLIANCE

HMS-10 DIMENSIONS



HMS-10 Dimensions with Fixed Bracket (OmniMount 17FM-F)



HMS-10 Dimensions with Adjustable Bracket (OmniMount 17FM-T)



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HMS-10 Operating Instructions, PN 05.198.011.01 B