

4. Specifications and Dimensions

General Specifications

Type	Active 2-way system, analog electronics
Frequency Range	30 Hz – 40 kHz
Crossover Frequency	330 Hz
Max. Sound Pressure Level	110 dB/1 m short-time (peak)
Limiter	Separate limiters for the HF and LF path, optocoupler circuit prevents signal degradation
Input Connector	XLR-3 (balanced, PIN 2 = signal +)
Mains Connector	230 VAC, 50/60 Hz, internally switchable to 120 VAC, IEC receptacle with replaceable fuse
Mains Fuse	5 AT (230 V), 6.3 AT (120 V), fuse type: micro-fuse 5 x 20 mm
Power Indicator	LED green
Limiter Indicator	LED green/red
Dimensions (H x W x D)	44.8" x 10.6" x 8.4"
Weight	105.7 lbs/48 kg

Sound Transducer

HF	Manger Sound Transducer, band width 80 Hz – 40 kHz, rise time 13 μ s
LF	8" fiber glass-polyester sandwich construction, 38 mm voice coil diameter
Enclosure	Closed, separate chambers with elaborate and meticulously adapted damping

Amplifier Section

Maximum Output Power	LF: 250 W in 8 ohms HF: 180 W in 8 ohms
Power Band Width HF	250 kHz (-3dB)
Input Sensitivity	6 dBu (1.54 V) or 0 dBu (0.775 V)
Input Impedance	10K ohms
Control Switches	Input Trim switch: 11 positions (-2.5 dB to 2.5 dB) Input Sensitivity switch: 6 dBu/0 dBu Polarity switch: 0°/180° AV-filter: high-pass filter (80 Hz, 12 dB/oct.) Ext. LF-Module switch: 0 dB/-6 dB Room Acoustics Correction switch: shelving filter at 100 Hz (+3 dB, 0 dB, -3 dB, -6 dB) Nearfield-/Cinema Screen Correction switch: bell filter at 3.25 kHz, 1.0 oct. (+3 dB, 0 dB, -1.5 dB, -3 dB) High Frequency Trim switch: shelving filter at 10 kHz (+2 dB, +1 dB, 0 dB, -1 dB, -2 dB)

MANGER
PRECISION IN SOUND

MSMs1 Reference Active System

2-Way Active Sound Transducer System

Owner's Manual



1. Safety Instructions

1. Important Safety Instructions

- Read these instructions carefully before operating the Manger Active System.
- Heed the warnings on the rear panel of the unit.
- Refer opening of the unit to qualified service personnel. If the unit has to be serviced or opened, for example, under our supervision, you must disconnect it from the mains.
- Unplug the unit during lightning storms or when unused for long periods of time.
- Clean the unit only with a dry cloth.
- For safe operation the ventilation openings and rear panel must not be blocked.
- Do not expose the unit to direct sunlight and do not install it near radiators or other heat sources.

Caution!

Do not expose the unit to rain or moisture and do not place objects filled with liquids, e. g. vases, glasses oder bottles, on the unit. This could damage the unit and constitutes a risk of electric shock to persons!

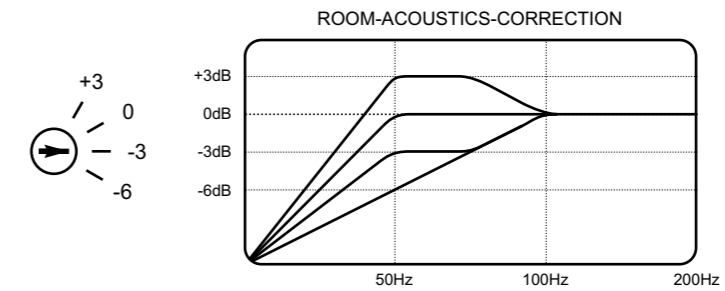
1.2 Table of Contents

1.	Important Safety Instructions	2	3.3	Back Panel Controls	6
1.2	Table of Contents	2	3.3.1	Input Trim	6
2.1	Introduction	2	3.3.2	Sensitivity	6
2.2	Unpacking and Setting Up	3	3.3.3	Polarity	6
2.3	Aligning	3	3.3.4	AV-Filter	6
2.4	Connections	4	3.3.5	Ext. Manger LF-Module	6
2.4.1	Audio Connections	4	3.3.6	Room-Acoustics-Correction	7
2.4.2	Mains Connection	4	3.3.7	Nearfield-/Cinema Screen-Correction	7
3.1	Front Panel Displays	4	3.3.8	High-Frequency-Trim	7
3.2	Limiter	5	4.	Specifications and Dimensions	8

3. Listening to Music on the MSMs1 Active System

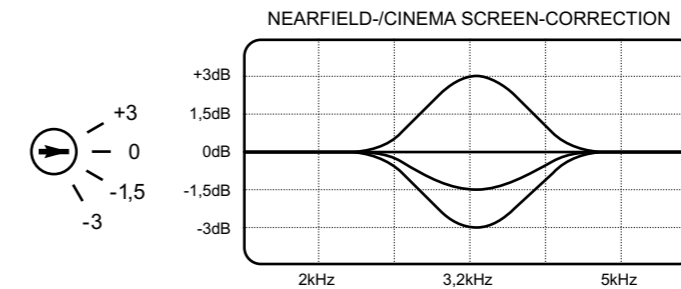
3.3.6 Room-Acoustics-Correction

This rotary switch is used to adapt the MSMs1 in different set-ups to the room acoustics or the room geometry. The shelving filter has a slope of 6 dB/oct. and a cut-off point of 100 Hz. Please use this rule of thumb for your settings: 0 dB for free monitor placements in the room, -3 dB for placements close to a wall and -6 dB for placements in corners. A boost by 3 dB is also possible. The diagram below shows the different effects.



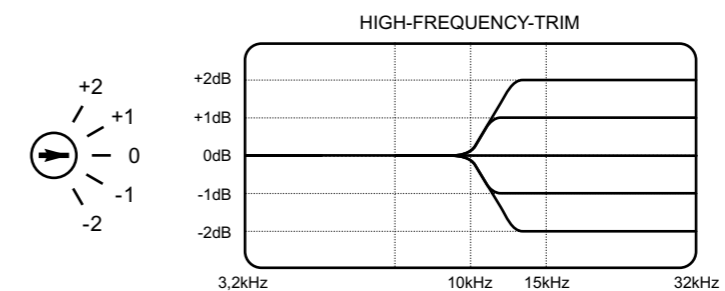
3.3.7 Nearfield-/Cinema Screen-Correction

This filter has been developed especially for near-field applications and emulates the hearing sensitivity curves according to Robinson-Dadson (see also Fletcher-Munson). They state that the sensitivity of the human ear reaches its peak between 3 kHz and 4 kHz. By attenuating this range by -1.5 dB or -3 dB you can counteract this raised sensitivity especially at high listening volumes. On the other hand, by boosting this range by 3 dB you can compensate for the damping of numerous commercially available perforated studio screens. You should apply this boost when the MSMs1 Active System is set up behind such screens. The diagram below shows the different effects.



3.3.8 High-Frequency-Trim

This shelving filter can be used to cut or boost frequencies above 10 kHz at a slope of 6 dB/oct. in 1 dB steps. Use this filter to compensate for extreme air damping (e. g. temporary high humidity) or irregularly damped rooms (loss of highs) by boosting the treble range. Attenuation may be necessary when strong reflections in the listening room boost the treble range. This switch can also be used to adapt the system to your personal taste and individual preferences.



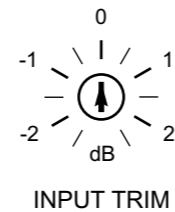
3. Listening to Music on the MSMs1 Active System

3.3 Back Panel Controls

Use the supplied screwdriver to adjust the "INPUT TRIM", "ROOM-ACOUSTICS-CORRECTION", and "NEARFIELD-/CINEMA rotary switches.

3.3.1 Input Trim

The Input Trim rotary switch is used to finetune the input sensitivity in 0.5 dB steps in the range of -2.5 dB to +2.5 dB. This is useful to compensate for tolerances in the signal path (e. g. preamplifier output) and adjust a precise acoustical stereo center. The default value is 0dB.



3.3.2 Input Sensitivity

The Input Sensitivity switch is used to set two sensitivities:

OFF for the standard studio sensitivity of 6 dBu (full-scale level of the HF power amplifier at 1.54 V)

ON for the higher sensitivity of 0 dBu (full-scale level at 0.775 V), e. g. for direct connection of a CD player with adjustable output to the active system.



INPUT SENSITIVITY: OFF = +6dBu, ON = 0dBu

3.3.3 Polarity

When set to ON the Polarity switch inverts the signal phase by 180°. This function can be used to temporarily compensate for phase errors between the channels or to change the polarity of the entire monitoring system (all channels).

Researches have shown that positive excursions of the microphone diaphragm followed by positive excursions of the woofer improve the dimensionality and spatial imaging of the music. In the OFF position the positive input signal is followed by a positive excursion (outward).



POLARITY: ON = INVERSE

3.3.4 AV-Filter

The ON position activates a high-pass filter at 80 Hz with a slope of 12 dB/oct. in the bass path only. This function is useful when a subwoofer is added or when you are listening in small rooms and the bass range needs to be attenuated.



AV-FILTER, 80Hz, 12dB/oct.

3.3.5 External Manger LF-Module

An additional bass module can be used to increase the maximum sound pressure level by 6 dB. The module is connected to the Speakon output via special cable (**MSMc1 only**). To preserve the level balance between treble and bass path this switch has to be set to ON.



EXT. MANGER LF-MODULE

2. Before You Power Up the System

2.1 Introduction

Thank you very much for choosing a Manger product. We at Manger ensured that your new sound transducer system reflects our philosophy „Precision in Sound“ in every detail. This becomes evident not only in the precision of manufacturing but also in the way the MSMs1 reproduces music and other sound events. You will feel like you are looking through a magnifying glass and discover the slightest nuances of music. Only innovative technology and a totally new approach to sound transducers can accomplish this. The Manger Sound Transducer (MSW) is a tool that enables you as a professional to complete your work with precision and ease at the highest level and over long periods of time without hearing fatigue. Music lovers will be pleased to learn that the MSW reproduces the wealth of musical details in such an effortless and authentic way that you will refuse to stop listening. So no matter if you are a music professional or an aficionado we hope you share our enthusiasm for this amazing product and enjoy the new sonic experience it offers.

Our slogan "Precision in Sound" not only describes the reproduction quality of our products but also symbolizes highest precision and quality at all levels of our work: Our sound transducers are manufactured with the precision of a watchmaker. Our sound systems are assembled and tested with the same precision. And our products are handed over to our customers and serviced in exactly the same manner. So if your Manger product should not work the way you expect it to or if you want to share your experience with the Manger Sound Transducer, do not hesitate to contact us. We will immediately help you with words and deeds and live up to our excellent reputation.

2.2 Unpacking and Setting Up the MSMs1 Active System

Please set down the cardboard box in such a way that you can read the caption on the front side. Use a short knife to open the box and remove the blue polystyrene frame from the front panel of the MSMs1.

Please pay attention not to touch the MSW (Manger Sound Transducer). If possible, ask someone for help when you lift the floorstanding system out of the box. Reach under the enclosure (between enclosure and blue frame), lift the system out of the box and set it down on the aluminum base plate.

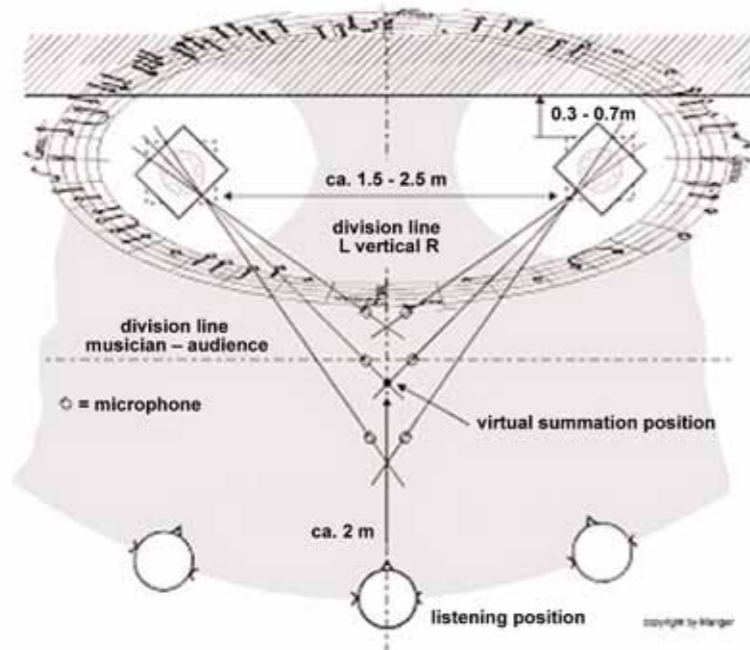
Use spikes to couple the enclosure to the floor. Use spring damping components (e. g. Manger Isopucks) to uncouple it. Lay the system on its side to install the spikes. Place the enclosure on a soft surface to avoid scratching it. Now set the units up at their intended position.

2. Before You Power Up the System

2.3 Aligning the MSMs1 Systems

If your room allows for it: Choose a base width of maximum 3 m for your stereo set-up. The two radiation axes should intersect about 0.5 m in front of your head. In an ideal constellation the left and right loudspeaker enclosures and this intersection in front of the listening position form an equilateral triangle. While you are listening you can leave your center position and move to a different position and the acoustic image of the ensemble will not change – provided that the correct recording technique has been used. This is one of the main advantages of the Manger Sound Transducers.

For further information on recording techniques and spacial imaging please refer to our website www.manger-msw.com.



2.4 Connections

2.4.1 Audio Connection

The balanced XLR input (3) of the MSMs1 can be connected to the balanced signal source of a professional device (preamplifier, audio interface, etc.). The XLR input of the MSMs1 can also be connected to Hi-Fi devices with unbalanced outputs (RCA). In this case PIN 3 (signal -) must be connected to PIN 1 (shield) on the RCA side of the (balanced) connection cable. A suitable cable can be ordered from Manger Products.

2.4.2 Mains Connection

Connect the supplied mains cord to the IEC socket (4) of the MSMs1 and a grounded mains outlet. At the factory the MSMs1 has been set to a supply voltage of 230 V/50-60 Hz. For countries using 120 V/50-60 Hz the supply voltage can be switched internally (by Manger Products). After power-up the signal is delayed for two seconds before it reaches the loudspeakers. The mains fuse is housed in a retainer inside the IEC socket. If the fuse has to be replaced you can use the supplied screwdriver to access it.



3. Listening to Music on the MSMs1 Active System

3.1 Front Panel Displays

In addition to the distinctive Manger Sound Transducer and the woofer (behind a speaker grill) there are two LEDs above the aluminum base plate on the front panel of the MSMs1. They have different functions:

- The left LED lights green when the active system has been connected to the mains and switched on.
- The right LED also lights green when the internal limiter is switched on, but inactive. The LED blinks red or lights constantly red when the limiter is actively limiting the level of the treble or bass path or both. More details in the next chapter "3.2 Limiter". When the right LED does not light at all the limiter has been switched off permanently.



3.2 Limiter

The limiter has been designed by Manger especially for the MSMc1/MSMs1 and provides several useful functions:

- An optocoupler circuit prevents detrimental components in the signal path.
- Separate limiters protect the woofer and the MSW against overloads.
- Different attack and release times for the woofer and MSW path ensure optimum calibration.
- The limiter can be switched off, if necessary.
- A LED displays the limiter status (of both signal paths) in two colors.

When you listen to the MSMs1 at high volume levels the woofer represents the level-limiting component of the system as it will activate the limiter before the MSW does. Listening to (bass-heavy) music near the threshold or above it can result in the bass path being limited before the treble path. When the signal level is further increased only the treble path (MSW) will get louder and the frequency response will be warped.

As soon as the limiter is activated (right LED blinks or lights red) you should decrease the listening level to the point where the LED stops blinking red and constantly lights green to prevent any degradation in reproduction quality.

If you want to do without the limiter's protection against woofer and MSW overloads we can switch the limiter off for you. After that the LED will not light anymore. This action will void any warranty claims with respect to MSWs and woofers that have been damaged by overloads.