



Sound Management Group

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Sound Shadow® Sound Masking System

By

Sound Management Group, LLC

The goal of correct acoustical design in both open and closed-plan office space is to reduce noise levels and establish speech privacy. While reducing noise levels creates a more comfortable environment, it does not eliminate distractions or create speech privacy. In most cases, the conversations and other distractions are still audible although at a subdued volume. It becomes “So quiet, you can hear a pin drop.” We hear sounds because they are absolutely loud, but also because they are relatively loud. The faucet dripping in the middle of the night creates a substantial distraction not because it is absolutely loud, but because it is relatively loud.

The intent of sound masking is to introduce a comfortable, uniform and pleasant background sound into the office environment. Correctly designed, this sound is:

- Uniform throughout the space with no “hot spots” or “dead spots”.
- The volume is such that it does not prevent the occupants from carrying on normal conversation either over the phone or directly with other people in their immediate office or conference area. It is, however, sufficiently loud so as to overwhelm distractions from adjacent workspaces.
- The tonal qualities of sound masking should be such that they are soothing; a “hum” as opposed to a “hiss”. Low frequencies are much more tolerable than high frequencies.

While a well-designed sound masking system will not entirely eliminate intrusive sounds, it will neutralize and obscure most so as to minimize their distraction potential and create speech privacy: a condition where you may be able to hear, but cannot understand that which is being said in adjacent space.



Sound Management Group

Turnkey Solutions to Noise Control

www.soundmanagementgroup.com

"The single most powerful determinant of individual performance, team performance, and job satisfaction is the ability to do, for all job types, large amounts of distraction-free work ... with noise being the greatest bulk of distractions."

Michael Brill
President
BOSTI ASSOCIATES

I gladly chose Sound Management Group to provide Speech Privacy solutions for our Allstate office space in Oswego IL. Sound Management Group removed a system by Soft DB and installed the Sound Shadow sound masking system in our entire office area and we instantly realized the results. As promised, it created a much more efficient, calming, and secure work environment. Sound Management Group was able to help us understand our sound challenges, install a great sound masking system, and provided the solutions we needed for optimal workplace productivity. The project was completed efficiently, without disruption to our staff, and the office was left cleaner than it started.



Kevin Calder
Allstate Insurance

Sound Shadow Sound Masking Systems: Workspace Solutions for Efficiency and Speech Privacy

With the development and popularity of the open office plan, acoustic design in today's work environment has become much more prevalent. Why is acoustic design important?

Proper attention to acoustic design has a measurable effect on the bottom line. If we look at our people as the engine to our organizations, taking measures to make that engine run with greater efficiency has shown to have proven results.



Research has indicated that the dollar value benefit of appropriately designed offices are substantial, as are the costs of poorly designed ones. Workplace measurability affects performance, job satisfaction, and ease and quality of interactions, which are important bottom line measures for any organization.

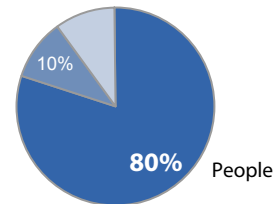
80% of company costs per annum are spent on people.

Building costs over the course of ten years:

- 80% people
- 10% technology
- 10% operations and workplace.

(Data from BOMA Building Owners and Managers Association)

Operations & Workplace Technology



Benefits of Sound Masking

- ❖ Satisfaction - Sound Masking can help decrease one of the most pervasive complaints within today's workplace; distractions.
- ❖ Privacy- Allowing personnel to work in comfort with an acceptable level of background noise. Keeping confidential conversations confidential.
- ❖ Efficiency- Multiple third party studies show the positive effects of acoustical design to increase workspace efficiency by up to 18% with a reduction in distractions
- ❖ Cost - The cost outlay for design build or retrofitted acoustical design is commonly covered within one year of operation based on efficiency increases.
- ❖ Compliance- Maintaining speech privacy guidelines in Healthcare (HIPAA) and Financial (GLBA) facilities is a responsibility of the organization.

Sound. It's All Relative

Many spaces that are perceived to have a noise problem actually have a quiet problem. It's so quiet that you can hear a pin drop. You can also hear and understand many of the conversations around you. Sound, like many things in life, is best understood in relative terms. We have all heard someone say "I can't hear you," while the water is running or observe, "It was so quiet, you could hear a pin drop." These are statements concerning the relative level of sound; that is, relative to the background or ambient sound level. We hear that dripping faucet only when the house is quiet ... usually when we are trying to sleep.

Silence is Golden? No, not always.

It is very important to remember that Silence is Not Golden where speech privacy and overall comfort in the office is concerned. This is especially true of open plan space. "The quieter the better," is not what provides for a comfortable, efficient environment. Silence is very disconcerting to most people and must be avoided.

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Shadow® Features and Specifications



Modular Control Unit



Plenum Speakers



Master Rack



Exposed Speakers



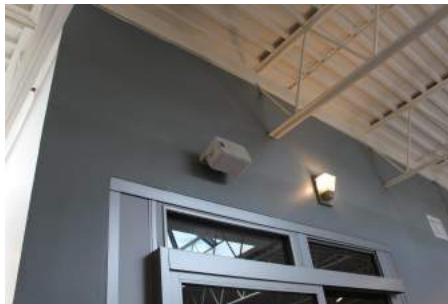
Modular or Central Masking Systems

SoundShadow® masking systems deliver a uniform level of properly tuned masking sound through speakers which are usually concealed above a suspended ceiling. Our Master Control Unit M-101 provides a signal to as many as 16 speakers. Our Shadow Central system can provide a signal to an extensive number of speakers. All components meet applicable national codes. Installation and relocation is easy, most components "snap" together.

SoundShadow® by Sound Management Group provides state of the art technology to the field of acoustical design with sound masking systems:

Advanced: Solid State Circuitry and digital masking source are contained within one master unit to control zones of up to 4,000 square feet each. Each zone is independently controlled from a source within the zone or at a central location.

Unobtrusive: SoundShadow® masking units can be placed above a drop ceiling, flush mounted in drywall or mounted in an exposed deck providing function without compromising aesthetics.



Exposed Speakers



Exposed Speakers

Optional Features: Paging and Alarms

SoundShadow® can easily be configured to include paging and emergency alarm features. Paging is via a code-protected dial up number, allowing authorized personnel to make announcements over the masking system. In addition to the paging feature, it is possible to pre-record messages which can then be activated using the secure dial-in line.

Installation Timed Attenuator TV

SoundShadow® system has an optional feature that will allow the volume to be ramped up over a period from 5 to 15 days. The masking volume will start below ambient and ramp-up at 1/4 decibel steps over the period selected until it reaches the desired final volume. Ideal for occupied space where the introduction of masking should not be perceived by the occupants.

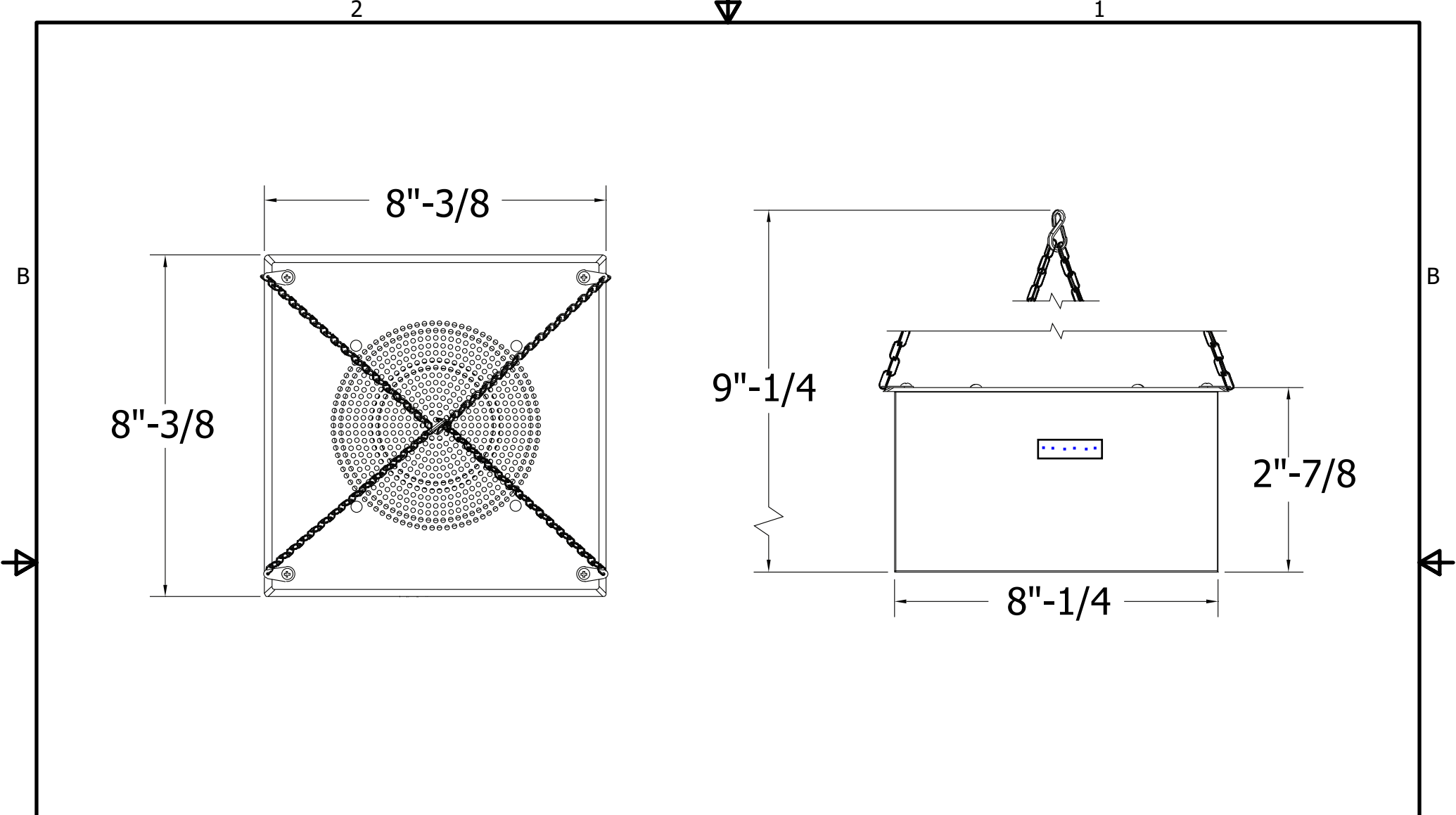
Octave Band Graphic Equalizer E

This option allows the installer/tuner to achieve virtually any spectrum distribution of the masking sound. While the basic options are frequently within the preferred spectrum, a more tailored audio spectrum may be preferred. The SoundShadow® E-101 1/3 octave 28-band graphic equalizer enables this precise tuning.


For more information on SoundShadow® Sound Masking visit:
www.soundmanagementgroup.com or call us at **800-221-0580** for more information including our full range of acoustic control products.

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DRAWN Engineering	11/13/2018
CHECKED	
QA	
MFG	
APPROVED	

			
TITLE			
Sound Shadow Speaker			
SIZE	DWG NO	REV	
A	SPKMODEL-1	A	
SCALE	1 / 2	SHEET 1 OF 1	



Sound Shadow® Sound Masking Central Control System

1.1.1

The Sound Shadow central system is composed of a noise generator and amplifier. An optional octave band equalizer and paging interface may be added. It is pre-engineered to plug into a standard wall outlet.

1.1.2

Noise Generator

Model M-101-RM (Rack Mount) is an analog noise generator with true randomness and Gaussian distribution or equivalent. It is capable of producing an output level of 1 volt into 600 Ohms or 8 Ohms (0 dB M). It shall have an adjustable low pass and high pass filter. The maximum intensity level shall be 90dB (A) to the NC 40 curve. The rack shall contain all the electronics in a standard RETMA 19in. rack.

1.1.2

Amplifier.

The Audio Amplifier is powered to accommodate the number of speakers in the system it supplies a signal to.

Features:

- Multiple Protections including relay, short circuit, and A/C circuit breaker.
- Separate input gain control for 600 Ohm/ Tel-Page
- Transformer isolated outputs for 70.7 volt line operation.
- Rack Mount Standard

Specifications:

Power Output: 1.1 Watts RMS per speaker

Distortion: 0.3% THD

Outputs : 4 Ohm Direct or 70.7V line.

Frequency Response: +0, -1dB 20 – 20kHz, Direct Output; +0, -1dB 50 to 15kHz, 70.7V Output

Input Impedance: Tel-Page: 600Ω; High Impedance: 10K Ω

Input Sensitivity: Tel-Page 50mV; 600 Ω: 0.50V; High Impedance: 0.50 V.

Controls: Tel-Page, Master Gain, Power On-Off

Hum and Noise: 90dB below rated Output (Unweighted)

General:

Power Source: 120VAC 60Hz (240VAC – 50Hz Optional)

Finish: Flat Black

Dimensions: 19" W x 5.25" H x 13.5"D (48.2 cm x 13.3 cm x 34.3cm)

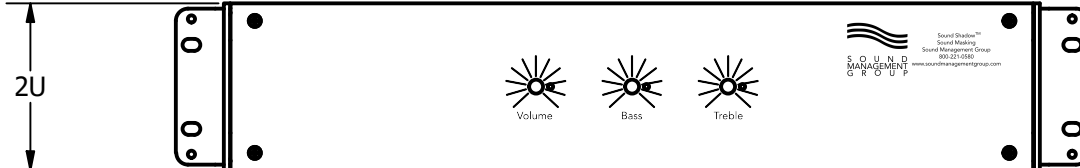
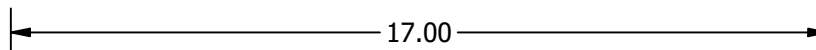
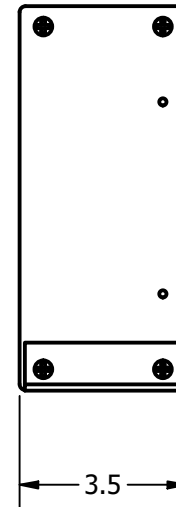
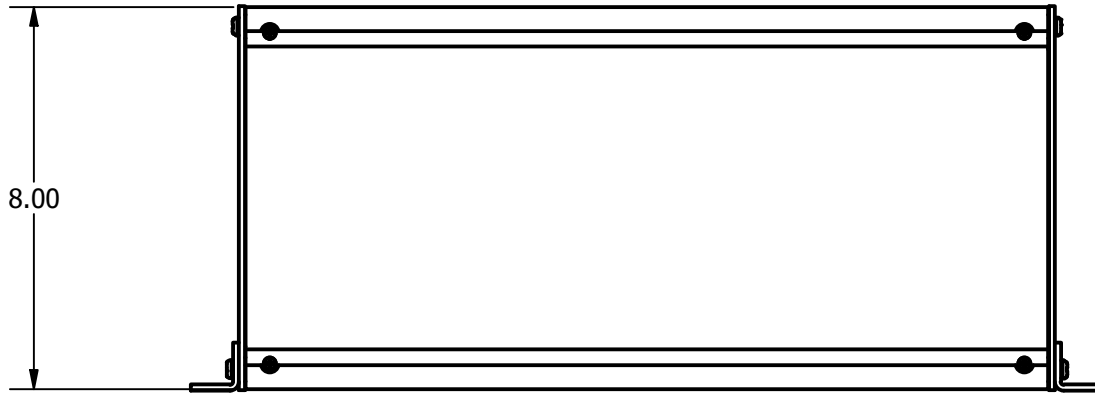
Weight: 51 lbs (23.6kg)

2

1

B

B



A

A

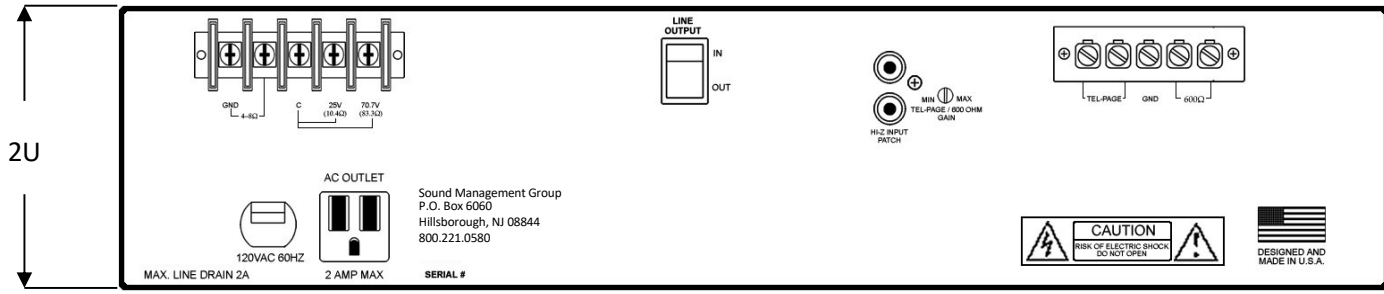
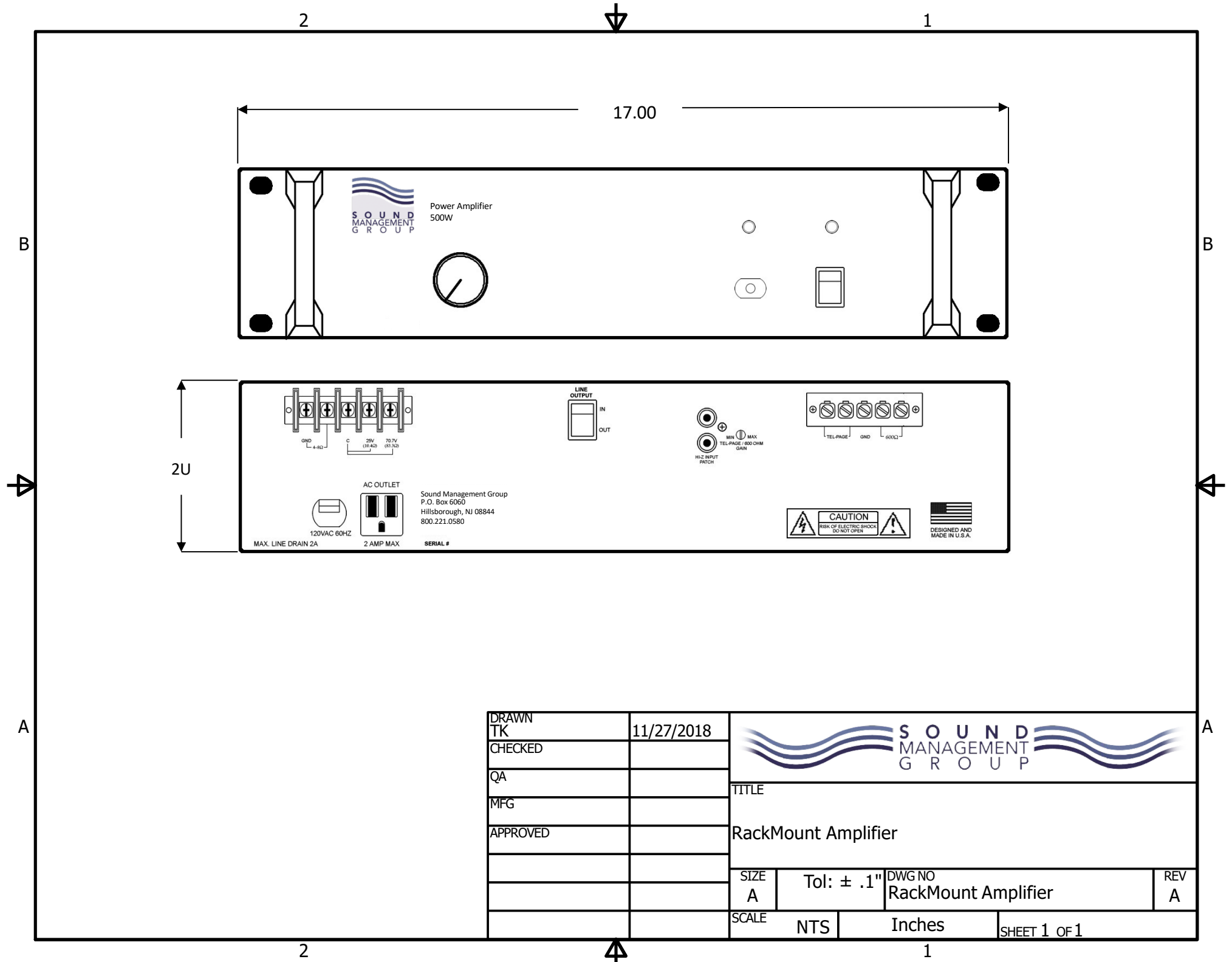
DRAWN	TK	1/4/2019
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QA		
MFG		
APPROVED		

TITLE		
Rack Mount Master		
SIZE	DWG NO	REV
A	Rack Mount Master	B
SCALE	1 / 4	SHEET 5 OF 5

2

1





DRAWN	TK	11/27/2018
CHECKED		
QA		
MFG		
APPROVED		

TITLE			
RackMount Amplifier			
SIZE	Tol: ± .1"	DWG NO	REV
A		RackMount Amplifier	A
SCALE	NTS	Inches	SHEET 1 OF 1