



INSTALLATION INSTRUCTIONS

SM516 PROMMERCIAL® SPEAKER

INTRODUCTION

The Sound Advance Prommercial SM516 is designed for a wide range of indoor and outdoor commercial applications. When properly installed, this product will provide years of high quality sound reproduction.

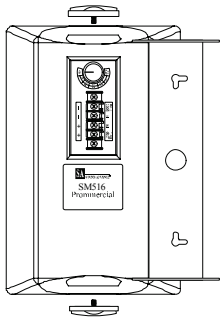
To obtain the full potential of this Sound Advance speaker, please read all instructions before starting the installation.

PARTS LIST

Each Sound Advance SM516 speaker package includes the following items:

- (2) Sound Advance SM516 speakers
- (4) Bracket knobs
- (2) C-shaped mounting brackets

INSTALLING THE SPEAKERS



Step 1

Remove the speakers from the shipping carton. Loosen the two knobs on each speaker and remove the brackets.

Step 2

Run wire from your amplifier to the speaker locations.

Typical wire gauge and lengths used in 70 volt systems:

- 18 gauge x 10 watt load = 2200 feet
- 18 gauge x 20 watt load = 1100 feet
- 18 gauge x 50 watt load = 550 feet
- 18 gauge x 100 watt load = 275 feet

Note: When using the speakers in an 8-ohm system use the Wire Gauge Chart on page 2 as a reference.

Step 3

Mount the C-brackets to the wall surface. The holes in the brackets are 5-7/8" apart center-to-center. Use the included stainless steel screws if you are mounting the speakers outdoors. Run the speaker wires through the wire holes in the C-brackets.

Step 4

Connect the wire from your amplifier to the terminals on the back of the speaker. Double check the polarity of the speaker wires, amplifier + to speaker + and amplifier - to speaker -.

Once the wires are connected you can set the rotary switch located on the back of the speaker to the appropriate output level.

The combined wattage requirements of the speakers should not exceed 80% of the amplifiers rated output. Following this rule will increase the reliability of your installation.

Here is an example:

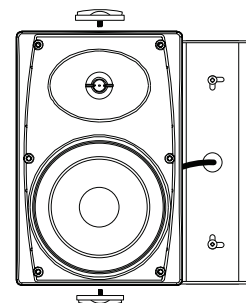
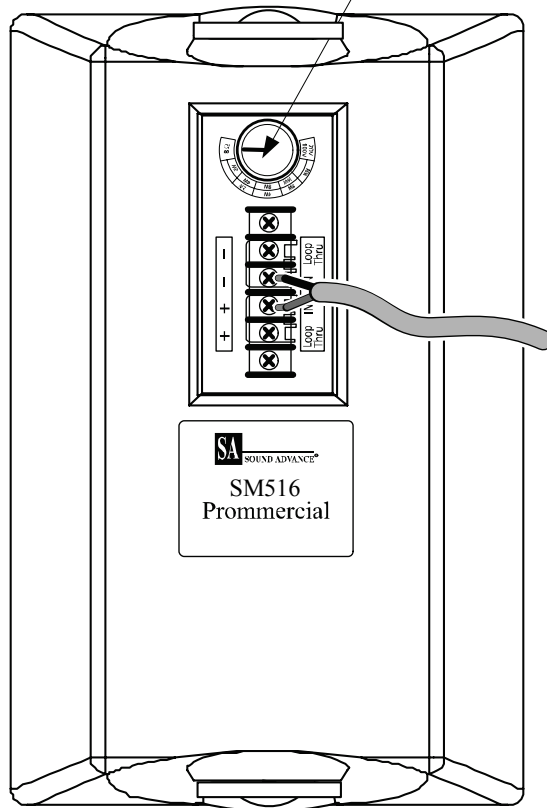
A system uses 24 SM516 speakers set on their 2-watt taps.

$$24 \text{ speakers} \times 2\text{-watt tap} = 48 \text{ watts}$$

$$48 \text{ watts} / .80 = 60 \text{ watts (use this size amplifier)}$$

Transformer Tap Switch

- 70 volt - 16W, 8W, 4W and 2W
- 100 volt - 16W, 8W, 4W and 2W
- 8 Ohm



Step 5

Install the speaker onto the bracket. Screw the bracket knobs into the cabinet. Point the speaker towards the listening area. Once the angle of the speaker has been determined tighten the bracket knobs securely.

WIRE GAUGE AND QUALITY

When using the SM516 in an 8-ohm system the total wire resistance should be less than 10% of the speaker impedance. The SM516 speaker is nominally an 8-ohm speaker, so your total wire resistance should be no more than 0.8 ohms.

In simple terms, the extra resistance from the wire will have a very negative affect on the sound quality of the speaker. The sound can be less dynamic, definition of bass frequencies can be reduced, and in extreme cases, the high frequencies can be attenuated. Amplifier power is also wasted in the wire, reducing the maximum output level of the system.

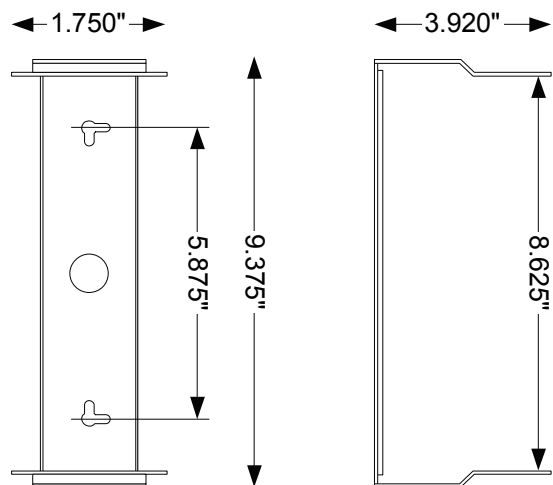
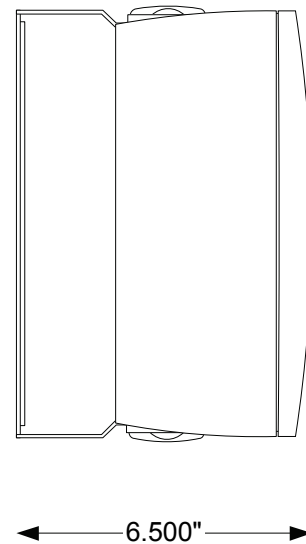
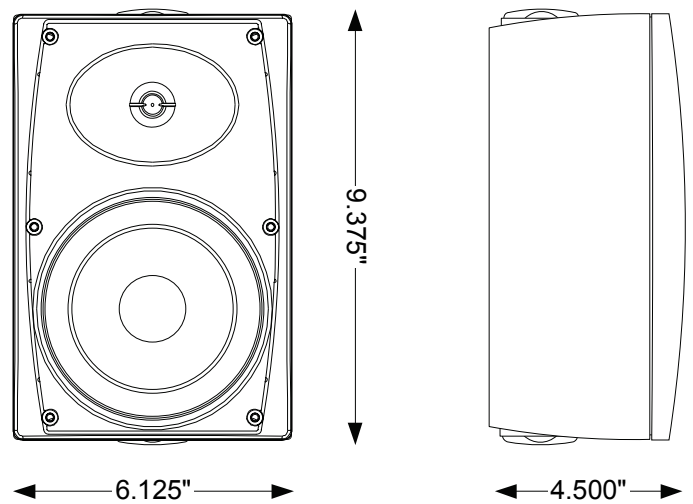
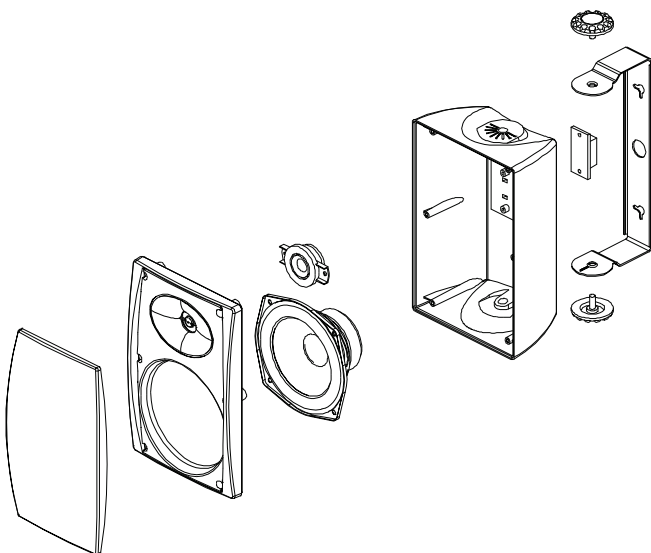
Please refer to the following chart when deciding on the appropriate wire gauge for your installation.

Wire resistance in Ohms vs. length of cable run						
Distance in Feet	50'	100'	150'	200'	250'	300'
20 gauge	.86	1.73	2.59	3.45	4.32	5.18
18 gauge	.65	1.30	1.94	2.59	3.24	3.89
16 gauge	.43	.85	1.28	1.71	2.14	2.56
14 gauge	.27	.54	.81	1.08	1.35	1.62
12 gauge	.17	.34	.51	.68	.85	1.02
10 gauge	.11	.22	.33	.44	.56	.67

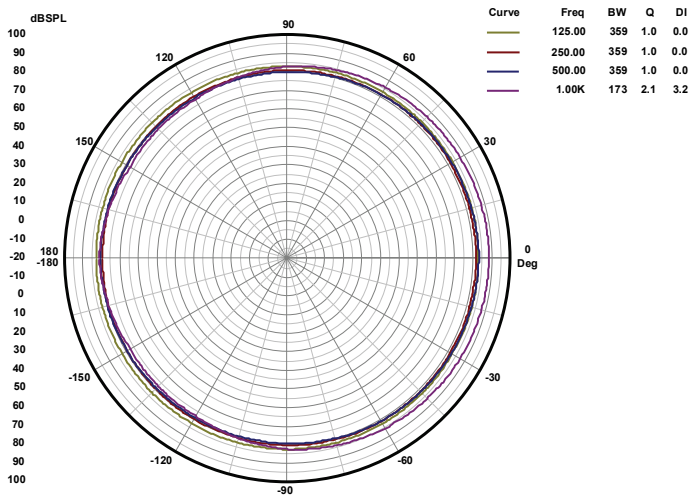
PAINTING THE SPEAKERS AND GRILLES

Sound Advance SM516 speakers feature a tough, weather-resistant ABS finish that may be painted to color match your surroundings. Use a weather resistant outdoor paint and a spray gun. First remove the grille by carefully prying it away from the baffle. The driver components must be protected from paint when spraying. Place the grille on a piece of cardboard and trace around the outside of the grille. Cut just inside the line you drew on the cardboard and place the paint plug on the speaker baffle. Remove the paint plug when you are finished painting.

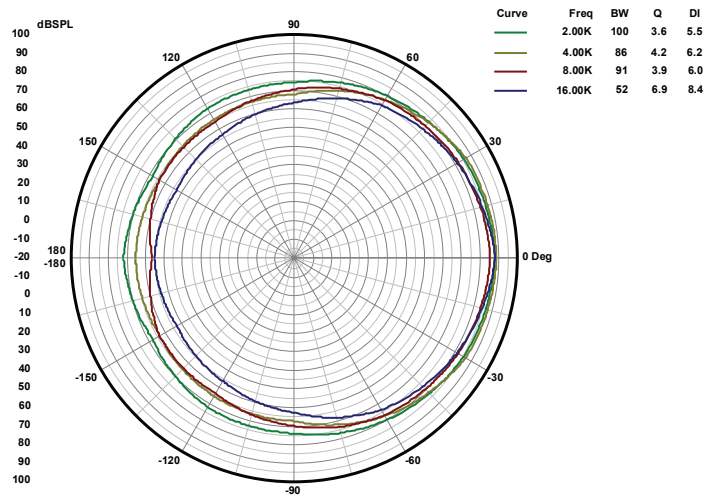
The metal grilles may also be painted. Use very thin paint (5:1). It will be easier to paint the grille while it is off the speaker. Avoid plugging up the holes with excess paint.



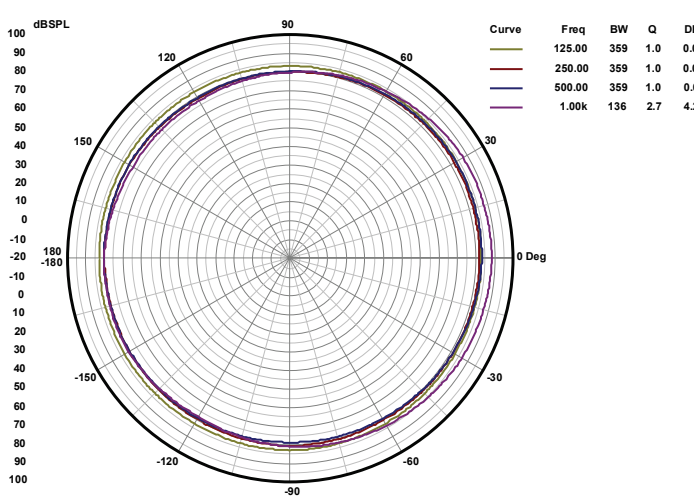
Polar Response Horizontal 125 to 1k



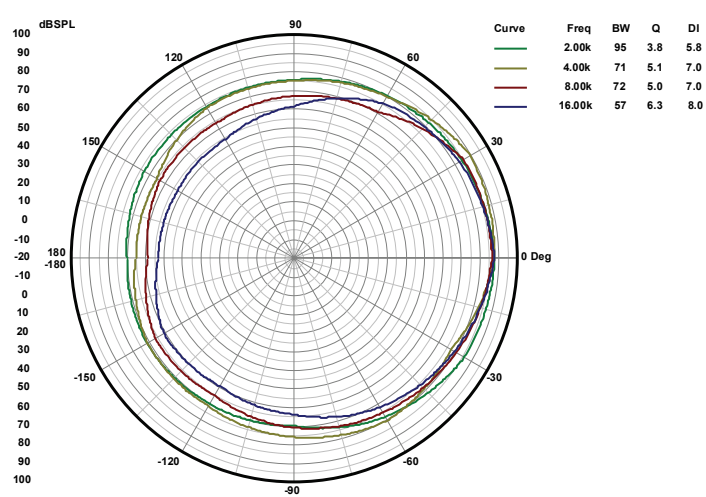
Polar Response Horizontal 2k to 16k



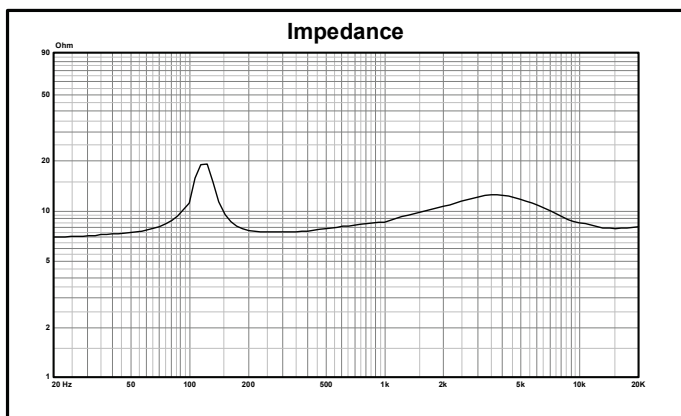
Polar Response Vertical 125 to 1k



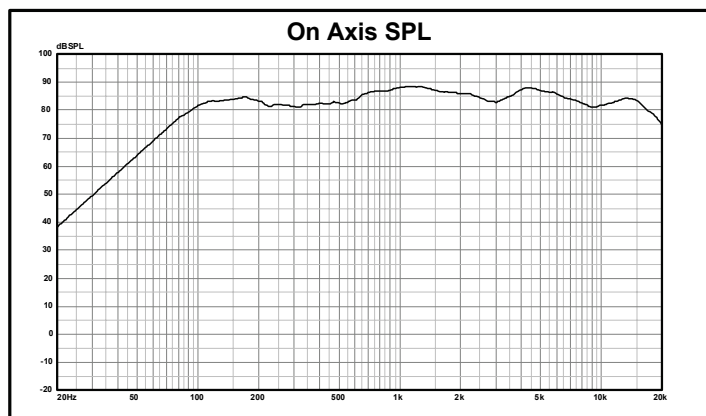
Polar Response Vertical 2k to 16k



Impedance



On Axis SPL





SOUND ADVANCE PROMMERCIAL SM516

Tweeter	5/8" (16mm) Polycarbonate dome
Woofer	5-1/4" (133mm) Polypropylene cone with a rubber surround
Frequency Range	65Hz – 20kHz ±10dB
Nominal Sensitivity	88dB 1w/1m
Nominal Coverage angle	90.0 degrees vertical 90.0 degrees horizontal
Directivity Factor	2.94 averaged from 500 Hz to 4 kHz
Directivity Index	3.50 averaged from 500 Hz to 4 kHz
Transformer Taps	70 volt - 16W, 8W, 4W and 2W 100 volt - 16W, 8W, 4W and 2W 8 Ohm
Power Capacity	60 watts maximum program power 40 watts continuous Pink noise
Enclosure	Enclosure: ABS meets UL94V-0 fire rating Baffle: ABS meets UL94V-0 fire rating
Grille	Paintable weather resistant aluminum
Termination	4-Post barrier strip
Speaker Dimensions	6-1/8" (156mm) x 9-3/8" (238mm) x 6-1/2" (165mm)
Product Weight	8.0 lbs (3.63 kg) each
Shipping Weight	19.0 lbs (8.61 kg) per pair
Included Accessories	C - Bracket
Available Colors:	Black (SM516K; White (SM516W)

ARCHITECTURAL SPECIFICATIONS

The loudspeaker shall be of the two-way type comprising a single surface mount enclosure containing one 5-1/4" (133mm) low frequency transducer and one 5/8" (16mm) high frequency transducer.

Frequency response shall be 65 – 20000Hz. Total power handling shall be 40 watts RMS and 60 watts program. Sensitivity measured with 2.83 volts input at 1 meter on axis averaged between 65 – 20000Hz shall be 88dB. The unit shall be supplied with a line matching transformer suitable for 100 volt or 70 volt with a rear mounted control allowing user selectable power taps of 16W, 8W, 4W, 2W and a 8 ohm bypass.

The enclosure and baffle shall be injection molded using fire rated ABS that meets UL94V-0. Wire shall be terminated on the rear of the enclosure.

The system shall include a powder coated aluminum C-bracket for mounting the speaker.

External dimensions shall be 6-1/8" (156mm) width x 9-3/8" (238mm) height x 6-1/2" (165mm) depth. Each enclosure with mounting bracket shall weigh 8 lbs. (3.63 kg) per unit.

The loudspeaker shall be the Sound Advance Prommercial SM516K (black) or SM516W (white). No other system shall be acceptable unless the above combined performance specifications are equaled or exceeded.

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TECHNICAL ASSISTANCE AND SERVICE

The Technical Assistance Department at Sound Advance is available at (800) 592-4644 or (949) 492-5449 to answer any questions concerning the operation and installation of your speakers between the hours of 7:00 AM and 5:00 PM Pacific time, Monday through Friday, except holidays.

In the event your unit should need repair or service, you may return the unit to your authorized dealer or use the following guidelines:

1. Be prepared to state the model number and / or serial number, date of purchase and dealer's name and address when calling.
2. Contact Sound Advance directly at (800) 592-4644 or (949) 492-5449 or at www.soundadvance.com
3. If you are returning the product directly to Sound Advance, call us to obtain a return authorization number before shipping.

YOU MUST HAVE PRIOR AUTHORIZATION TO RETURN YOUR UNIT.

4. The original packaging must be used. If the original packaging is unavailable, replacements can be obtained from Sound Advance for a small fee.
5. Ship the product via United Parcel Service, Federal Express, or other package delivery service. Please do not use the U.S. Postal Service.
6. Write the return authorization number on the outside of the box.
7. Ship to: **Attn: Quality Assurance Department
Sound Advance
212 Avenida Fabricante
San Clemente, CA 92672-7531**
8. **FREIGHT COLLECT SHIPMENTS WILL BE REFUSED!**

WARRANTY, REMEDY, EXCLUSIONS AND LIMITATIONS (USA ONLY)

Limited Warranty:

Sound Advance warrants this product to the original purchaser to be free from defects in material and workmanship, under normal use and conditions, for a period of five (5) years from the date of original purchase as shown on the invoice.

The foregoing exclusive warranty gives you specific legal rights, and you may have other rights, which vary from state to state. This warranty applies exclusively to the original purchaser.

The exclusive warranty does not apply and is ineffective if:

1. The invoice fails to establish that the product was purchased from an authorized Sound Advance dealer or distributor;
2. The product was subjected to misuse, neglect, accident, or improper installation. [Damage to the product was caused by accident, abuse, or misuse];
3. The product was modified, altered, or repaired by unauthorized personnel; or
4. The unit was not used as described in the installation and operating instructions.

Exclusive Remedy:

Sound Advance agrees, at its option during the five (5) year warranty period, to repair any defect in material or workmanship or to furnish an equal product in exchange without charge to the purchaser, subject to verification of the defect and proof of the date of purchase.

Warranty Exclusions and Damage Limitations

The exclusive warranty set forth above is in lieu of all other warranties, express or implied, including without limitation the implied warranties of merchantability and fitness for a particular purpose, which are expressly disclaimed. In no event, and under no circumstances or legal or equitable theory, shall Sound Advance be liable or responsible for any direct or indirect damages, consequential damages, loss, or injury, including without limitation, personal injury, bodily injury, property damage, emotional distress, death, real property or personal property damage, business interruption, costs of delay or lost profits arising from the product, whether based upon warranty, contract, negligence, strict product liability or other theory.