# SELF-AMPLIFIED (24V) SYSTEMS

Bogen introduces the next generation in self-amplified (24V) paging equipment. Only Bogen offers high-efficiency horn speakers that use digital switching amplifiers and constant dispersion horn technology; single- and multi-zone telephone paging interfaces that provide a new level of features and flexibility with programmable AUX relay contacts and installer programmable dialing codes; and an extensive line of 24V switching power supplies with secure mounting holsters and pluggable screw terminal connectors on models above 1 amp.

To locate Bogen's Self-Amplified (24V) Paging Products, simply look for the upward-pointing GREEN triangles and the downward-pointing RED triangles. The numbers inside the triangles indicate "Current Units", which determine how much power that product provides to or consumes from the system.

CURRENT UNITS	CURRENT UNITS	CURRENT UNITS
+	**–**	**0**
CURRENT UNITS		CURRENT UNITS
Provides System Current	**Consumes System Current**	**No Draw on the System**

Other products such as telephone interfaces, buffered level controls and 24V power supplies that are well suited for use in self-amplified paging systems carry these same icons for easy identification. Suitable products that neither provide nor consume power are shown with the neutral GRAY icon with a zero inside it.

For more information on understanding Current Units for your system, see pages 68-69.
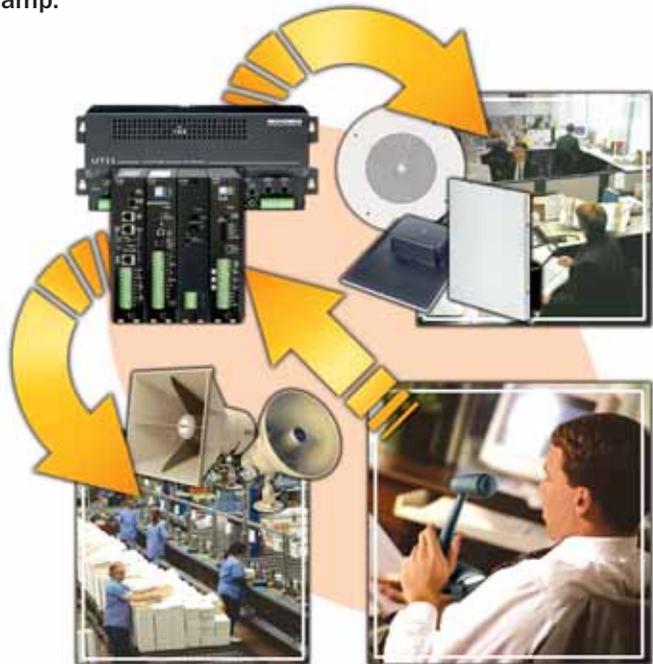
Getting Started

1. **Select Self-Amplified Speaker Type** *(Use this chart)*

2. **Select a Telephone Interface** *(pages 31-33)*

3. **Select Power Supplies** *(page 30)*

SPEAKER MODELS		ASWB1, ASWG1, ASWG1DK, ACD2X2, ASM1, AMBS *see pages 23-25*	SAH5, AH5A *see pages 26-28*	SAH15, SAH30, AH15A *see pages 26-28*
TYPICAL AMBIENT NOISE LEVEL	**TYPICAL ENVIRONMENTS**			
VERY HIGH NOISE 85-95 dB Speech Almost Impossible To Hear	• Construction Site • Loud Machine Shop • Noisy Manufacturing • Printing Shop			
HIGH NOISE 75-85 dB Speech Is Difficult To Hear	• Assembly Line • Crowded Transit Waiting Area • Machine/Print Shop • Shipping Warehouse • Supermarket (Peak) • Very Noisy Bar or Restaurant			
MEDIUM NOISE 65-75 dB Must Raise Voice To Be Heard	• Bank/Public Area • Transit Waiting Area • Department Store • Noisy Office Setting • Supermarket (Normal) • Bar or Restaurant			
LOW NOISE 55-65 dB Speech Is Easy To Hear	• Conversational Speech • Doctor's Office • Hospital • Hotel Lobby • Quiet Office • Quiet Bar or Restaurant			

SELF-AMPLIFIED CEILING SPEAKERS

Drop-In Ceiling Speakers

ACD2X2, ACD2X2U

CURRENT UNITS -1

Tile Support Rail *(included)*

The **ACD2X2** full-range speaker is quick and easy to install. Simply wire it and drop it into place. This saves installation time, effort, and cost.

Now available in Bright White ("U" version) & Off-white

Product Features:

- 2' x 2' design fits into 2' x 2' and 2' x 4' suspended ceiling tile spaces *(tile support rail included for 2' x 4' ceilings)*
- Finely perforated grille covers entire front of speaker panel
- Fully enclosed, industrial-grade steel construction
- Front-mounted, recessed volume control
- Self-contained 1-watt amplifier
- 8" main cone speaker, with secondary cone
- Non-reflective finish, off-white *(ACD2X2)* or bright white *(ACD2X2U)*
- Listed to UL Standard 60065 for US & Canada
- Complies with UL-2043

See page 30 to select a Power Supply.

Dimensions:	23-7/8" W x 5" H x 23-7/8" D
Product Weight:	12 lb. each

Determine Speaker Quantity

Using the chart:

1. Locate the dimensions of the room (length and width).

2. Where these two measurements meet will be the number of speakers required. Use the number in **GREEN** for 8' ceilings; **BLUE** for 10' ceilings; and **PURPLE** for 12' ceilings.

   (You may need to increase the number of speakers in areas where large objects or shelving project into the coverage area, blocking sound.)

3. The number of Current Units needed is the same as the number of speakers *(1W models, ACD2X2(U), ASWG1/DK, ASUG1/DK, ASM1, AMBSL/Q1).*

Current Units (min.) = Number of Ceiling Speakers

GREEN for 8 ft. Ceiling
BLUE for 10 ft. Ceiling
PURPLE for 12 ft. Ceiling
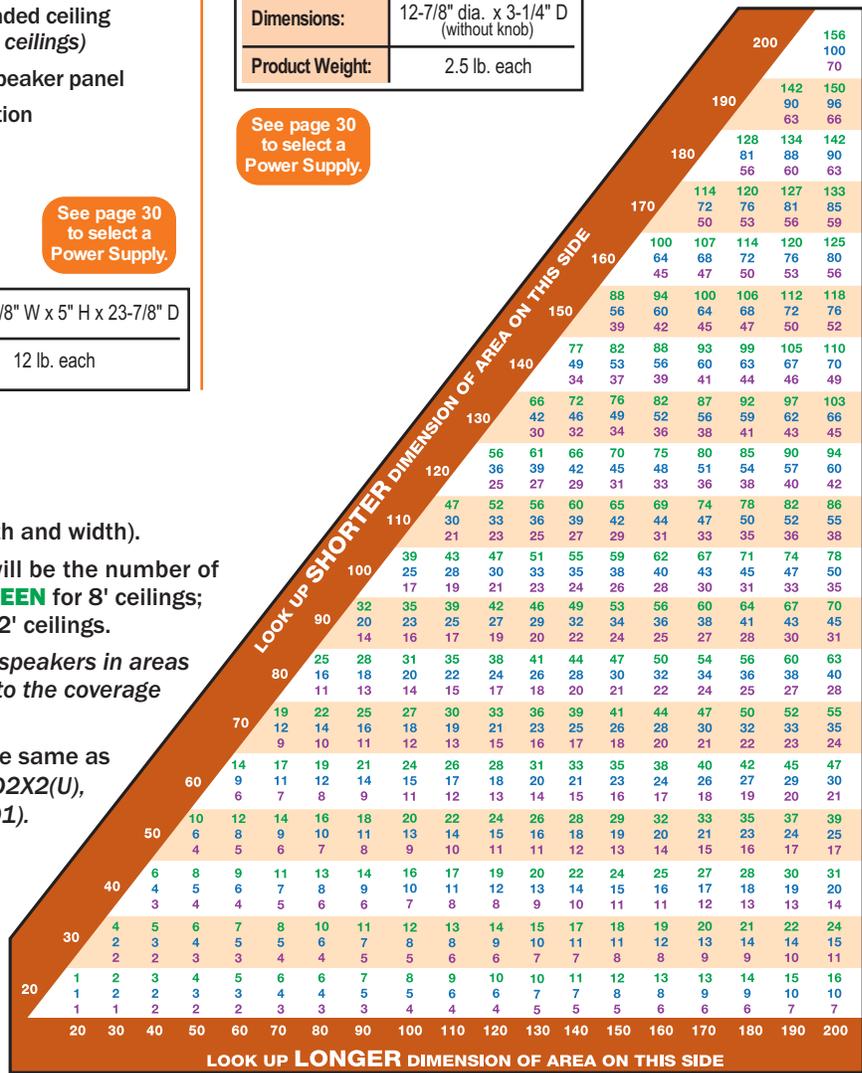
Ceiling Speaker Assemblies

CURRENT UNITS -1

These traditional style, recessed ceiling speakers are available with a fixed or detachable volume control knob.

ASWG1, ASUG1

Product Features:

- 8" cone speaker
- Front-mounted volume control with knob *(knob is detachable on "DK" versions)*
- Steel grille with enamel finish, off-white *("W" versions)* or bright white *("U" versions)*
- Self-contained 1-watt amplifier
- 90° dispersion pattern

ASWG1DK, ASUG1DK
(w/detachable knob)

Now available in Bright White ("U" versions) & Off-white ("W" versions)

Accessories

TB8 Tile Bridge
RE84 Ceiling Enclosure
MR8 Mounting Ring

Dimensions:	12-7/8" dia. x 3-1/4" D (without knob)
Product Weight:	2.5 lb. each

See page 30 to select a Power Supply.

LOOK UP SHORTER DIMENSION OF AREA ON THIS SIDE

SHORTER \ LONGER	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200
200																			156/100/70
190																		142/90/63	150/96/66
180																	128/81/56	134/88/60	142/90/63
170																114/72/50	120/76/53	127/81/56	133/85/59
160															100/64/45	107/68/47	114/72/50	120/76/53	125/80/56
150														88/56/39	94/60/42	100/64/45	106/68/47	112/72/50	118/76/52
140													77/49/34	82/53/37	88/56/39	93/60/41	99/63/44	105/67/46	110/70/49
130												66/42/30	72/46/32	76/49/34	82/52/36	87/56/38	92/59/41	97/62/43	103/66/45
120											56/36/25	61/39/27	66/42/29	70/45/31	75/48/33	80/51/36	85/54/38	90/57/40	94/60/42
110										47/30/21	52/33/23	56/36/25	60/39/27	65/42/29	69/44/31	74/47/33	78/50/35	82/52/36	86/55/38
100									39/25/17	43/28/19	47/30/21	51/33/23	55/35/24	59/38/26	62/40/28	67/43/30	71/45/31	74/47/33	78/50/34
90								32/20/14	35/23/16	39/25/17	42/27/19	46/29/20	49/32/22	53/34/24	56/36/25	60/38/27	64/41/28	67/43/30	70/45/31
80							25/16/11	28/18/13	31/20/14	35/22/15	38/24/17	41/26/18	44/28/20	47/30/21	50/32/22	54/34/24	56/36/25	60/38/27	63/40/28
70						19/12/9	22/14/10	25/16/11	27/18/12	30/19/13	33/21/15	36/23/16	39/25/17	41/26/18	44/28/20	47/30/21	50/32/22	52/33/23	55/35/24
60					14/9/6	17/11/7	19/12/8	21/14/9	24/15/11	26/17/12	28/18/13	31/20/14	33/21/15	35/24/16	38/24/17	40/27/18	42/27/19	45/29/20	47/30/21
50				10/6/4	12/8/5	14/9/6	16/10/7	18/11/8	20/13/9	22/14/10	24/15/11	26/16/12	28/18/13	29/20/14	32/21/15	33/23/16	35/24/17	37/24/17	39/25/17
40			6/4/3	8/5/4	9/6/4	11/7/5	13/8/6	14/9/6	16/10/7	17/11/8	19/12/8	20/13/9	22/14/10	24/15/11	25/16/11	27/17/12	28/18/13	30/19/13	31/20/14
30		4/2/2	5/3/3	6/4/3	7/5/4	8/5/4	10/6/5	11/7/5	12/8/6	13/9/6	14/9/7	15/11/7	17/11/8	18/12/9	19/13/9	20/13/10	21/14/10	22/14/11	24/15/11
20	1/1/1	2/1/1	3/2/2	3/2/2	4/3/3	5/3/3	6/4/3	7/5/4	8/5/5	9/6/5	10/6/6	11/7/6	12/8/7	13/8/7	13/9/7	14/9/8	15/10/9	16/10/9	16/11/10

LOOK UP LONGER DIMENSION OF AREA ON THIS SIDE

SELF-AMPLIFIED SURFACE-MOUNT SPEAKERS

Easy Install®
Ceiling Speakers
ASM1 CURRENT UNITS -1

Bogen's **Self-Amplified Easy Install Speakers** can be installed in a ceiling tile in less than a minute in any drop ceiling with standard ceiling tiles. Installation is a simple, three-step process that requires no tools. Simply pierce the ceiling tile with the specially-designed studs, use wing nuts to secure the speaker to the ceiling, and fasten wire nuts to make the 24V DC power and audio connections.

Product Features:

- Installs in less than a minute
- No-tool installation eliminates need to cut ceiling tiles
- Built-in 1-watt amplifier
- Direct and reflected sound paths create wide dispersion angle
- Lightweight and durable, off-white plastic shell with paintable finish
- Contemporary, low-profile design
- O-ring seal prevents whistling and ensures smoother sound without peaks

- Front-mounted volume control
- Complies with NFPA National Code 160b for installation in plenums and other air handling spaces
- Complies with UL-2043

Refer to Speaker Quantity Chart on page 23.

Frequency Response	Maximum dBspl	Depth	Dimensions	Product Weight
125 Hz - 15 kHz	90	3" from tile surface	9-1/2" diameter	2 lb.

Accessories

SMTB
Tile Bridge

AMBSL1
Shown with Volume Knob detached

Metal Box Speakers

AMBSQ1, CURRENT UNITS -1
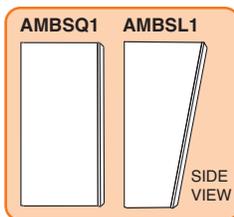## AMBSL1

Bogen's **Self-Amplified Metal Box Speakers** are available in two models, AMBSQ1 and AMBSL1, and are suitable for both ceiling and wall mounting.

Product Features:

- Rugged all-steel, surface-mounted, off-white painted enclosure
- Speaker front is available flat (AMBSQ1) or angled downward by 12.5 degrees for wall mounting (AMBSL1)
- Full-range 8" cone loudspeaker for excellent intelligibility
- Built-in volume control with detachable knob
- Self-contained 1-watt amplifier
- Wiremold® knockouts
- Mounting hardware included

AMBSQ1
Shown with Volume Knob attached

Detachable Volume Knob ←

AMBSQ1 AMBSL1

SIDE VIEW

Refer to Speaker Quantity Chart on pg. 23 for ceiling mount or chart on pg. 25 for wall mount.

Wiremold® is a registered trademark of Wiremold/Legrand.

Models	Front Panel Design	Frequency Response	Maximum dBspl	Dimensions	Product Weight
AMBSL1	Slant/Angle	110 Hz -15 kHz	92	11-5/8" W x 11-3/8" H x 5-3/8" D *(Top Dimension)* 11-5/8" W x 11-3/8" H x 3-1/8" D *(Bottom Dimension)*	9 lb.
AMBSQ1	Square/Flat	110 Hz -15 kHz	92	11-5/8" W x 11-5/8" H x 4-1/4" D	9 lb.

SELF-AMPLIFIED WALL BAFFLE SPEAKERS

Wall Baffle Speakers
ASWB1 CURRENT UNITS -1

The **ASWB1 Wall Baffle Speaker** is an 8", cone-type loudspeaker, complete with a built-in amplifier and volume control, designed for telephone paging applications. It is engineered to provide excellent sound quality and trouble-free operation.

Product Features:

- Self-contained 1-watt amplifier
- Simulated walnut finish with black grille cloth on front
- Sloping front panel *(13.5 degrees)* provides enhanced downward dispersion
- Easy wall-mount installation *(mounting hardware included)*
- Built-in volume control
- 8" main cone speaker
- 90° dispersion pattern

SIDE VIEW

Dimensions:	9-1/2" W x 9-1/2" H x 5-1/4" D
Product Weight:	4 lb.

Determine Speaker Quantity

Using the chart:

1. Locate the dimensions of the room (length and width).
2. Where these two measurements meet will be the number of speakers required.

   (You may need to increase the number of speakers in areas where large objects or shelving project into the coverage area, blocking sound.)

3. The number of Current Units needed is the same as the number of speakers.

Current Units (min.) = Number of Wall Mount Speakers

See page 30 to select a Power Supply.

LOOK UP SHORTER DIMENSION OF AREA ON THIS SIDE / LOOK UP LONGER DIMENSION OF AREA ON THIS SIDE

SHORTER \ LONGER	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200
200																			66
190																		60	64
180																	54	58	60
170																48	52	54	56
160															43	45	48	51	52
150														38	40	43	45	48	50
140													33	35	37	40	42	45	47
130												28	30	33	35	37	39	42	44
120											24	26	28	30	32	34	36	38	40
110										20	22	24	26	28	29	31	33	35	37
100									17	18	20	22	23	25	27	28	30	32	33
90								14	15	16	18	20	21	23	24	26	27	28	30
80							11	12	13	15	16	17	19	20	21	23	24	25	27
70						8	9	11	12	13	14	15	16	18	19	20	21	22	23
60					6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
50				4	5	6	7	8	8	9	10	11	12	12	13	14	15	16	17
40			3	3	4	5	5	6	7	7	8	9	9	10	11	11	12	13	13
30		2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
20	1	1	1	2	2	3	3	3	4	4	4	5	5	5	6	6	6	6	6

PAGING INTERFACE

Loop Start Interface/Power Supply
PRSLSI +9 CURRENT UNITS

The **PRSLSI** functions as both a 24V DC power supply and a loop start interface for small paging systems.

Product Features:

- 24V Talk battery supply for loop start ports
- Buffered audio output for up to 25 self-amplified speakers
- 450 mA, 24V DC power supply for external equipment
- Integral flanges and rubber feet for wall or shelf mounting
- 6-terminal barrier strip
- UL and C-UL listed

AMPLIFIED SPEAKER

PBX Loop Start Trunk Port, Key System C.O. Position or Telephone

PRSLSI

24V DC 450 mA + 1 / − 2
24V DC 35 mA + 3 / − 4
AMP SPKR R 5 / T 6
T / R

Loop Start Interface

Both the audio and power connections from self-amplified speakers can be connected to the PRSLSI. Connect the Tip and Ring terminals of the PRSLSI to a loop start trunk to provide paging access. The PRSLSI provides 9 CU (450 mA) of regulated 24V DC power for self-amplified speakers and enough audio capacity to drive 25 self-amplified speaker inputs.

Dimensions:	2-3/4" W x 4-1/2" H x 2-1/2" D
Product Weight:	3 lb.

SELF-AMPLIFIED HORN SPEAKERS

High-Efficiency, Digital Switching, Horn Loudspeakers

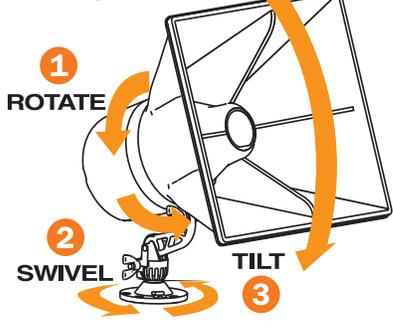### SAH5 (5W) -4, SAH15 (15W) -9, SAH30 (30W) -17

CURRENT UNITS

Using digital switching amplifier technology, these **Self-Amplified Horn Loudspeakers** provide unprecedented low DC current draw and heat dissipation, allowing them to use fewer power supplies, run on longer cable runs, and work at higher ambient temperatures than conventional analog self-amplified horn speakers. The shape of the horn's flare provides a controlled dispersion of sound for better intelligibility. The horn can be rotated on its axis, offering wide dispersion patterns, vertically or horizontally, depending on its position. In addition, these weatherproof, plastic horns are extremely durable and rugged. They can be used in any environment, indoors or outdoors, without affecting sound quality.

Product Features:

• 5-, 15-, and 30-watt models with built-in amplifiers

• All models operate from 24V DC power source

• Digital switching amplifier technology greatly reduces current consumption when compared to conventional analog self-amplified horn loudspeakers

• Low heat dissipation of the digital switching amplifier allows units to operate with continuous background music and in higher ambient temperatures than conventional analog amplifiers

• Excellent extended frequency response from 1.6'' diameter voice coil and 90 mm, 12-ounce magnet structure *(SAH5/15)*, or 100mm, 16-ounce magnet structure *(SAH30)*

• Rotatable horn allows for the use of a wider *(120°)* vertical or horizontal dispersion pattern

• Predictable dispersion pattern over the full frequency range ensures excellent intelligibility and ease of layout

• Removable access cover protects terminals and volume control

• Weatherproof, UV-protected mocha finish plastic housing

• Simple, secure, cast aluminum swivel mount

• Screw terminal strip for easy wire connections

• Electrical box mounting strap included

3 Ways To Position SAH Speakers

1 ROTATE
2 SWIVEL
3 TILT

See page 30 to select a Power Supply.

Accessories

BC1
Beam Clamp

Models	Maximum Power Level	Frequency Response	Maximum dBspl	Dimensions	Product Weight
SAH5	5 watts		119	10-5/8" W x 12" H x 11-1/2" D	6 lb.
SAH15	15 watts	275 Hz -14 kHz	124		
SAH30	30 watts		127		

Controlled Dispersion

Many horns in the market disperse sound frequencies in a wild and uncontrolled manner. This reduces intelligibility and causes inconsistent sound quality over the horn's coverage angle. Bogen's SAH horns benefit from Bogen's long history as a commercial and pro audio company. Bogen's SAH horns disperse the various frequencies that make up the sound of a page in a very carefully controlled manner. This means that the listener hears clean, crisp intelligible pages over the full coverage area of the horn.

At **15°** Off Axis, Only 4 dB Variation

TIGHT CONTROL OVER HOW SOUND IS DISPERSED

At **60°** Off Axis, Only 10 dB Variation

SAH5, SAH15, AND SAH30 HORNS

At **15°** Off Axis, Nearly 15 dB Variation

POOR CONTROL OVER HOW SOUND IS DISPERSED

At **60°** Off Axis, Nearly 24 dB Variation

COMPETITOR'S MODELS

— 500 Hz
— 1 kHz
— 2 kHz
— 4 kHz*
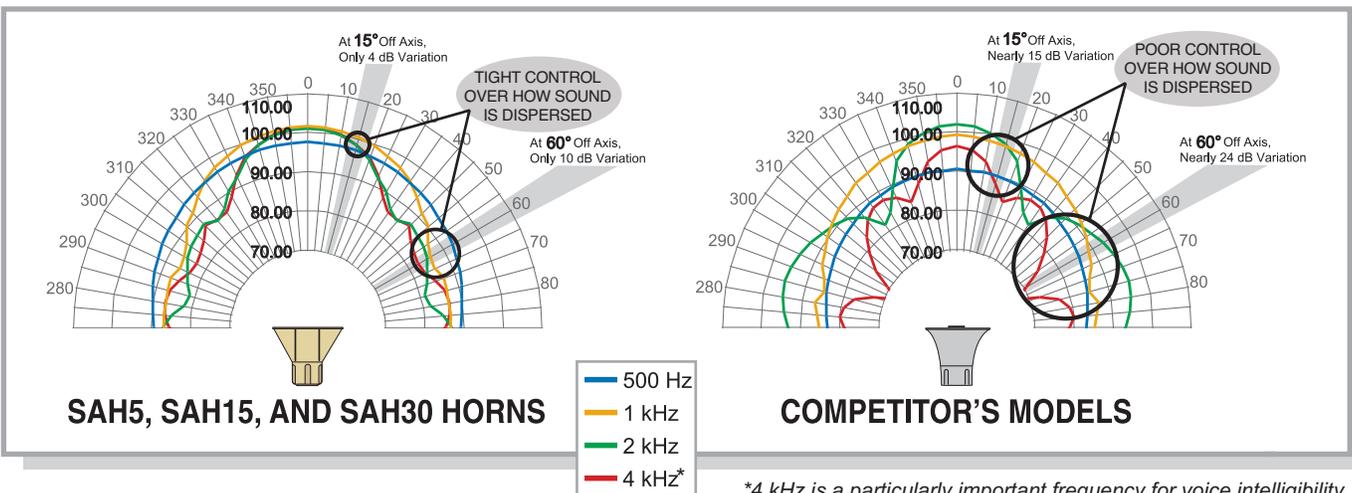
4 kHz is a particularly important frequency for voice intelligibility

Determine Speaker Quantity

Use the chart for the speaker you will use (SAH5, SAH15 or SAH30):

1. Choose the level of ambient noise in the area to be covered.

2. Locate the area's square footage.

3. Where these two measurements meet are two numbers. The number in **GREEN** is the number of speakers required. The number in **RED** is the number of Current Units (CU) needed for that many speakers. *(You may need to increase the number of speakers in areas where large objects or shelving project into the coverage area, blocking sound.)*

Current Units (min.) = Number in RED

SAH5

HORN QTY. & MIN. CURRENT UNITS (CU) BASED ON AMBIENT NOISE		SIZE OF AREA TO BE COVERED (THOUSANDS OF SQUARE FEET)																			
		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
55–65 dB Low Noise – speech is easy	HORNS	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
	CU	4	4	8	8	12	12	16	16	20	20	24	24	28	28	32	32	36	36	40	40
65–75 dB Medium Noise – must raise voice to be heard	HORNS	1	2	3	4	5	5	6	7	8	9	10	10	11	12	13	14	15	15	16	17
	CU	4	8	12	16	20	20	24	28	32	36	40	40	44	48	52	56	60	60	64	68

SAH15

HORN QTY. & MIN. CURRENT UNITS (CU) BASED ON AMBIENT NOISE		SIZE OF AREA TO BE COVERED (THOUSANDS OF SQUARE FEET)																			
		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
75–85 dB High Noise – speech is difficult	HORNS	1	2	3	4	5	5	6	7	8	9	10	10	11	12	13	14	15	15	16	17
	CU	9	18	27	36	45	45	54	63	72	81	90	90	99	108	117	126	135	135	144	153
85–95 dB Very High Noise – speech almost impossible	HORNS	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
	CU	18	36	54	72	90	108	126	144	162	180	198	216	234	252	270	288	306	324	342	360

SAH30

HORN QTY. & MIN. CURRENT UNITS (CU) BASED ON AMBIENT NOISE		SIZE OF AREA TO BE COVERED (THOUSANDS OF SQUARE FEET)																			
		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
85–95 dB Very High Noise – speech almost impossible	HORNS	1	2	3	4	6	7	8	9	10	11	12	13	14	16	17	18	19	20	21	22
	CU	17	34	51	68	102	119	136	153	170	187	204	221	238	272	289	306	323	340	357	374

Lower Currents = Lower Voltage Drops

Bogen's SAH self-amplified horn speakers consume significantly less current than equivalently sized conventional analog self-amplified horns. Lower current draw means less voltage drop, and longer cable runs than those allowed by conventional analog self-amplified horns. This allows more flexibility as to where you mount your power supplies and how many individual power supplies need to be installed.

Voltage Drop Comparison
(1 Horn at End of Cable - 24 ga.)

Temperature Comparison
(@ 1/3 Max Power)
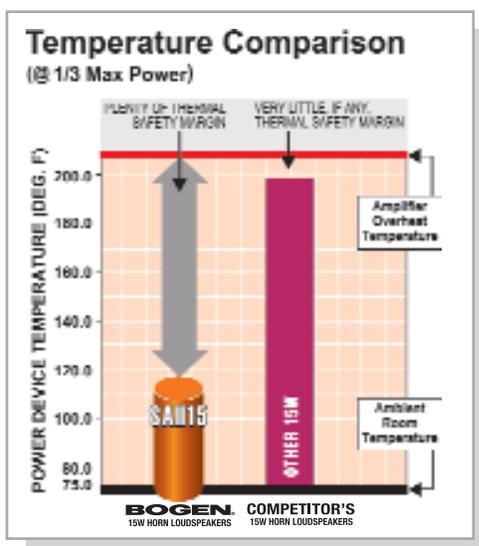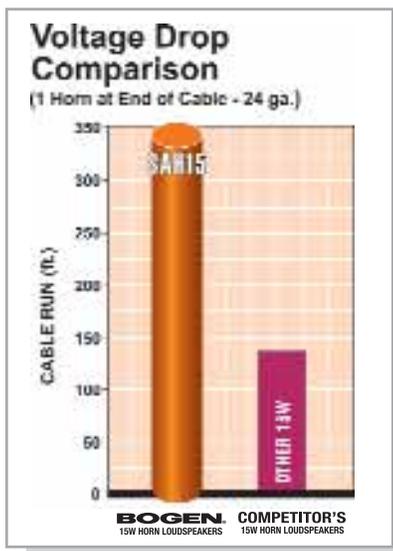
Thermally Rugged

The SAH self-amplified horn speaker's amplifier, by virtue of its high-efficiency digital switching technology, produces very little wasted heat. Lower amplifier operating temperatures mean these horns can work harder in higher temperature environments than conventional analog self-amplified horns. Lower operating temperatures also mean less stress on critical internal components and better reliability. Continuous background music is no sweat for these cool-running horns.

SELF-AMPLIFIED METAL HORN SPEAKERS

Traditional Metal Horn Speakers

AH5A(5W) -6, AH15A(15W) -18
CURRENT UNITS

The **AH5A** and **AH15A Metal Horn Speakers** are rugged, self-contained amplified paging horn assemblies that can be used for high noise paging areas indoors as well as for outdoor use. Their sturdy, weatherproof, all-metal construction allows them to withstand any environment while continuing to provide excellent audio intelligibility for paging and background music.

AH5A

AH15A

Product Features:

- 5- and 15-watt models with built-in amplifiers
- Screwdriver-adjustable volume controls
- Universal tilt-and-swivel mount
- Banding slots easily secure horns to beams and pillars
- 4-conductor, color-coded cable for quick connections to audio and power sources
- Plastic cover protects volume control and provides cable strain relief
- Self-aligning, field-replaceable diaphragm

- Weatherproof, all-aluminum housing
- Speaker and brackets have textured mocha enamel finish
- 110° dispersion pattern

Dimensions	Product Weight
9" dia. x 9-1/4" D	4 lb. each

See page 30 to select a Power Supply.

Accessories

BC1
Beam Clamp

TCSPT1
Terminal Cover for Conduit

HSES10
Horn Speaker Electrical Box Strap
(Pack of 10)

Determine Speaker Quantity

Use the chart for the speaker you will use (AH5A or AH15A):

1. Choose the level of ambient noise in the area to be covered.

2. Locate the area's square footage.

3. Where these two measurements meet are two numbers. The number in GREEN is the number of speakers required. The number in RED is the number of Current Units (CU) needed for that many speakers. *(You may need to increase the number of speakers in areas where large objects or shelving project into the coverage area, blocking sound.)*

Current Units (min.) = Number in RED

AH5A

HORN QTY. & MIN. CURRENT UNITS (CU) BASED ON AMBIENT NOISE		SIZE OF AREA TO BE COVERED (THOUSANDS OF SQUARE FEET)																			
		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
55–65 dB Low Noise – speech is easy	HORNS	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10
	CU	6	6	12	12	18	18	24	24	30	30	36	36	42	42	48	48	54	54	60	60
65–75 dB Medium Noise – must raise voice to be heard	HORNS	1	2	3	4	5	5	6	7	8	9	10	10	11	12	13	14	15	15	16	17
	CU	6	12	18	24	30	30	36	42	48	54	60	60	66	72	78	84	90	90	96	102

AH15A

HORN QTY. & MIN. CURRENT UNITS (CU) BASED ON AMBIENT NOISE		SIZE OF AREA TO BE COVERED (THOUSANDS OF SQUARE FEET)																			
		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
75–85 dB High Noise – speech is difficult	HORNS	1	2	3	4	5	5	6	7	8	9	10	10	11	12	13	14	15	15	16	17
	CU	18	36	54	72	90	90	108	126	144	162	180	180	198	216	234	252	270	270	288	306
85–95 dB Very High Noise – speech almost impossible	HORNS	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
	CU	36	72	108	144	180	216	252	288	324	360	396	432	468	504	540	576	612	648	684	720

LEVEL CONTROLS

Buffer/Expander/Volume Control

BUFEX **CURRENT UNITS -1**

Used with 24V systems, the **BUFEX** is a multi-purpose device that can work as a volume control for a network of speakers, and as a buffer that can drive up to 150 speakers. It also functions as a system expander when connecting to 100V, 70V, and 25V speaker systems.

To address the needs of emergency announcements, the BUFEX has a Bypass feature that allows emergency announcements to be heard at high levels regardless of the volume setting on the BUFEX. The BUFEX contains a Bypass Trim feature that allows some adjustment to the Bypass level.

Product Features:

- Local volume control for a group of speakers
- Provides buffering for up to 150 self-amplified speakers
- Allows self-amplified speakers to work with 100V/70V/25V systems, expanding existing systems
- Continuously variable attenuator
- Rugged and attractive stainless steel wall plate with engraved lettering
- Mounts in single gang wall box
- Easy and secure terminal strip connections
- Jumper selectable 100V, 70V, or 25V speaker selections as well as T/R
- Bypass feature overrides local volume setting for high importance messages
- Bypass trim allows a maximum 12 dB attenuation over bypass announcements

Bypass Feature

Local volume controls allow people working in an area to control the level of paging and background music for their needs. However, in paging systems where alert announcements are made as well as general announcements, local volume controls can be a problem. When users set volume controls for very low levels or off, the alert announcements may not be heard.

When the BUFEX's Bypass feature is activated (by an external contact closure), it overrides the local level setting of the BUFEX and allows important messages to be heard.

In certain circumstances, full level audio messages may be overpowering. The BUFEX includes a Bypass Trim that allows a maximum 12 dB of attenuation to the alert message when the local level is set to 0. As the local level is increased, the Bypass Trim will track this and increase the alert message level proportionally.
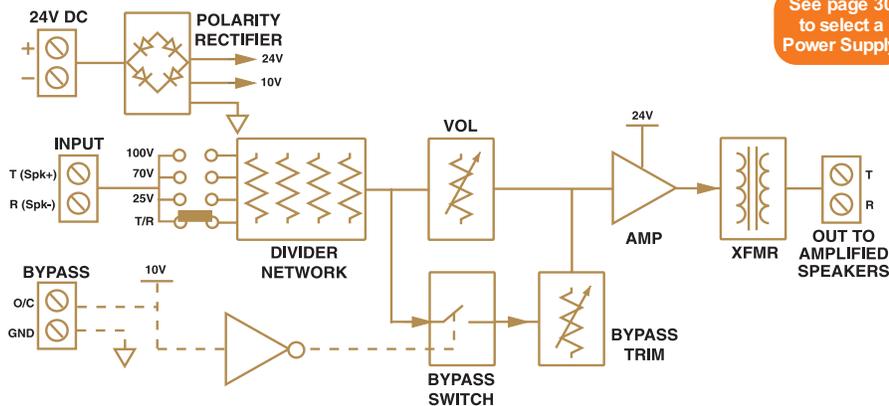
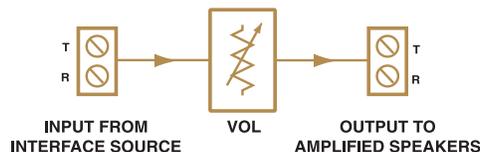| Dimensions	Product Weight
2-7/8" W x 4-5/8" H x 2-1/2" D	3 oz.

Signal Level Control

SLC **0 CURRENT UNITS**

The **SLC** provides a simple and cost effective way to remotely control the volume level of a network of up to 150 speakers. Simply wire in series with the audio feed to the desired group of amplified speakers. For 24V systems.

Product Features:

- Continuously variable attenuator
- Rugged and attractive stainless steel wall plate with engraved lettering
- Mounts in single gang wall box
- Easy and secure terminal strip connections
- Passive (requires no DC power)

Dimensions	Product Weight
2-7/8" W x 4-5/8" H x 2" D	2 oz.