

## SDV1109-6-A: MULTI-CHANNEL, CLASS D AMPLIFIER

### FEATURES

- **SIMPLE TO INSTALL – PLUG AND PLAY**
- **NO FANS OR ADDITIONAL COOLING REQUIRED**
- **CAN BE MOUNTED IN CEILING VOIDS, BACK OFFICES, EQUIPMENT RACKS, CASH DESKS.**
- **PROVEN DESIGN**
- **HIGH EFFICIENCY – TYPICALLY 80 to 90%**
- **CONTINUOUS POWER RATING – 80W RMS**
- **6.1 CROSS-OVER INCLUDED OR BYPASS FOR DIRECT OUTPUT**
- **CAN DRIVE 2, 4, or 6 SATELLITES AND A SUB-WOOFER**
- **DESIGNED TO ALLOW EASY LINKING TO ADJACENT AMPLIFIERS TO FORM AMPLIFIER NETWORKS.**
- **HIGH QUALITY SOUND REPRODUCTION**
- **HIGH SENSITIVITY**
- **REMOTE AND LOCAL VOLUME CONTROL**
- **BASS, MID AND TREBLE ADJUSTMENT**
- **FULL SHORT-CIRCUIT PROTECTION ON OUTPUTS**
- **ROBUST – BODY ALL METAL CONSTRUCTION.**
- **COMPATIBLE WITH THE ECOTEC SYSTEMS LTD RANGE OF CEILING AND WALL MOUNTING SPEAKERS<sup>1</sup>**
- **SMALL FOOTPRINT**
- **LOW COST**

### NOTES

- |        |           |                 |
|--------|-----------|-----------------|
| 1) See | SDV1100-A | Ceiling speaker |
|        | SDV1101-A | Wall speaker    |
|        | SDV1102-A | Channel speaker |
|        | SDV1111-A | Bass speaker    |

### APPLICATIONS

- **RETAIL BACKGROUND MUSIC SYSTEMS**
- **BACKGROUND MUSIC SYSTEMS FOR LEISURE CLUBS**
- **BACKGROUND MUSIC SYSTEMS FOR RESTAURANTS, BARS AND NIGHT CLUBS**
- **HOME CINEMA SYSTEMS**



### DESCRIPTION

The SDV1109-6-A is a seven channel class D audio amplifier. One channel is dedicated to a sub-woofer speaker (e.g. SDV1111-A). The other six channels can be used to drive various permutations of ceiling, wall or channel speakers. The EcoTec Systems Ltd range of speakers SDV1100-A, SDV1101-A and SDV1102-A can be readily interchanged. If less than six speakers are to be connected the cross-over can accept four or two speakers of any of the aforementioned types. For metal tile ceilings the SDV1103-A metal tile ceiling speaker should be considered. For full details about the possible permutations of the EcoTec Systems Ltd speaker range please contact EcoTec Systems Ltd or their authorised representative.

The power rating on the amplifier is for a continuous power rating (FTC, amplifier rule compliant). All amplifiers are 100% soak tested at full rated power for 10 minutes in addition to other parameter tests.

The efficiency of the EcoTec Systems Ltd class D amplifier compares favourably with traditional linear amplifier solutions. Typically the EcoTec Systems Ltd amplifier will have a carbon footprint 90% reduced compared to a linear equivalent. For more details on the environmental benefits of these amplifiers contact EcoTec Systems Ltd or their authorised representative.

# SPECIFICATIONS



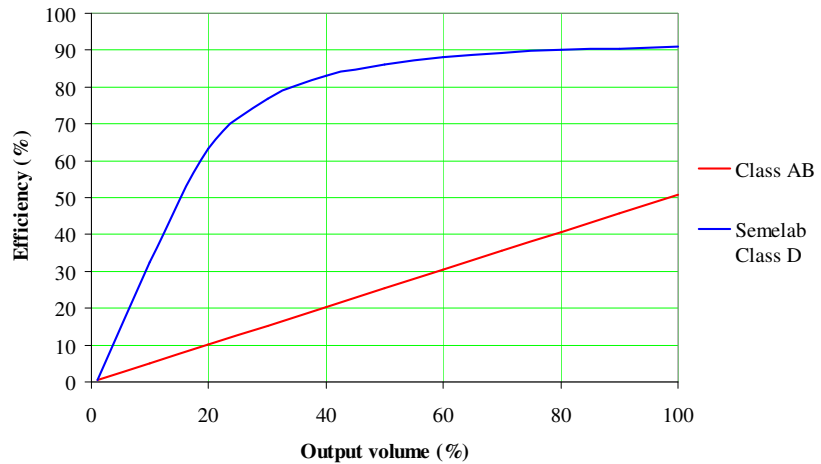
## Characteristics at a free air temperature of 25°C

PARAMETER	NOTES/TEST CONDITIONS	VALUE			UNIT
		MIN	TYP	MAX	
P	POWER HANDLING	FTC amplifier rule test measured after 5mins full power operation with sine wave input signal.			Wrms
W	WEIGHT	Excludes packaging, but includes MDF pattress.			Kg
Ø, H	DIMENSIONS	Excludes MDF Pattress. Length, width, height (inc. cross-over)			mm
V <sub>in</sub>	INPUT SIGNAL LEVEL	Differential input			V <sub>p-p</sub>
THD+N	DISTORTION	Measured at 1KHz, rated power			%
Fr	FREQUENCY RESPONSE	5Hz		22,000	Hz
Eff	Efficiency	At 90% full range input, see below			%

## Efficiency

The efficiency of the SDV1109-6-A amplifier is far superior to a traditional linear amplifier (Class AB). The actual efficiency is related to the input signal level and amplifier loading. Due to the rating of the amplifier and the distributed nature of the background music system in large venues, the SDV1109 is normally used in the operating region where the efficiency approaches 90%. The chart opposite shows a comparison of the SDV1109 and a traditional linear amplifier used in a retail environment for background music systems. At 50% output loading the linear amplifier is only 25% efficient, whereas the EcoTec Systems LtdSDV1109 amplifier is approaching 90% efficiency. In a sample retail environment it was recently determined that a linear amplifier system would dissipate 1,800W of wasted power (equivalent to leaving on a 2 bar electric fire). In the same retail site the EcoTec Systems Ltdamplifier would waste 90W of wasted power (equivalent to leaving on a light bulb).

Class AB amplifier and Class D amplifier efficiency



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# CONNECTIONS



## Power

The SDV1109-A has two mains connections. These connections are via Neutrik “PowerCon” connectors, which are rugged, latching mains connectors. The two connections on the amplifier are designed so power can be fed into the amplifier (Blue connector) and then fed out to another amplifier in the network (Grey connector). The amplifier draws 0.3A from the mains supply at full load, so it is easy to “daisy chain” up to 15 amplifiers on one spur (assuming suitable cable and circuit breaker rating).



Power Connectors

Audio Signal Connectors

## Audio Signal Connections and Control

The SDV1109-A has two audio signal (line) connections. These connections are via Neutrik XLR connectors or terminal block connectors (supplied). The two pairs of connections on the amplifier are designed so the audio signal can be fed into the amplifier (female connector) and then fed out to another amplifier in the network (male connector, pins visible). See connectors shown opposite.

The audio signal can be either differential or single ended see the wiring chart below for details.

The signal indicator can be used as a diagnostic during installation. When mains power and a suitable music signal are present the LED will flash in sequence to the music signal. The orange clip indicator can be used to detect too great an input signal and the input gain control can be used to trim back the signal.



On the front of the unit is a volume control knob. For full power this should be rotated full clockwise. If the amplifier is part of a multi-amplifier system the sound level in the local area covered by the amplifier can be reduced by turning this knob anti-clockwise. This is especially useful when the sound level has to be reduced near cash desks etc. At the rear of the unit are two connections for remote volume control. This is a resistance sensing connection and it can be used in conjunction with standard remote volume controls. The output of the remote volume can be looped to an adjacent amplifier such that multiple amplifiers can be controlled by the same volume control.

Individual trimmers are provided for bass, mid and treble equalisation. This is particularly useful when the amplifier is used as a background music system and the music volume is played very low. To preserve a measure of bass response the bass boost can be used to compensate for the low volume level. It is envisaged that these controls will be set during installation and not by the user.



Function	Value	Neutrik Connector Way (Differential Input)	Neutrik Connector way (Single ended)
Signal In Phase (+ve)	+3.3V max ( $\pm 3.3V$ single ended)	2	2
Signal Out of Phase (-ve)	-3.3V min (no sig. single ended)	3	n/c
Ground (GND)	0V	1	1,3

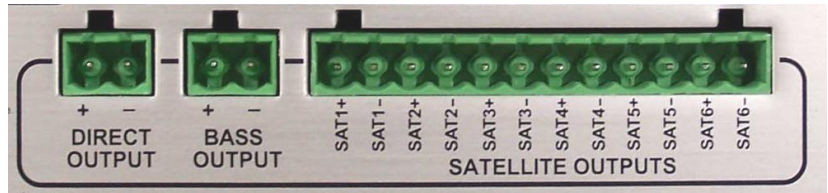
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# Speaker Connections



The bass speaker (sub-woofer) is connected to the amplifier on the rear terminal strip. The terminals for connection are labelled SUB+ (in-phase) and SUB- (anti-phase).

The satellite speakers can be connected in 2, 4, or 6 combinations. The EcoTec Systems Ltd range of wall and ceiling mounted speakers are all interchangeable and can be mixed in any permutation with the SDV1109 amplifier. The connections for the combinations are shown below.

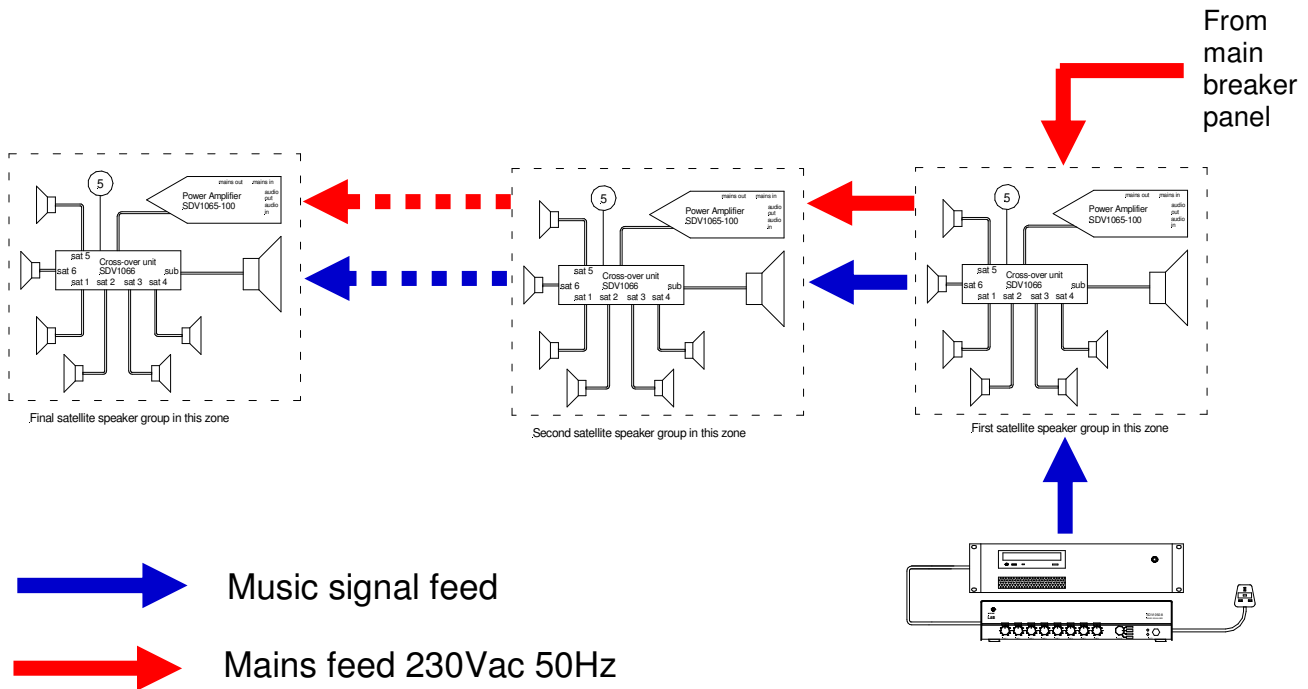


	2 Way Combination	4 Way Combination	6 Way Combination
SAT1	√	√	√
SAT2		√	√
SAT3			√
SAT4	√	√	√
SAT5		√	√
SAT6			√

The idents for the satellite speakers (SAT1, SAT2 etc) and the polarity of the connections are shown on the rear panel legends.

## Multi-Amplifier Zones

The SDV1109 amplifier can be used singly or in a network of amplifiers. The “daisy chain” ability with the mains and audio signal easily provide for this architecture. This is useful where large retail zones have to be covered. The basic interconnections of multiple amplifiers and speakers are shown below. For more information contact EcoTec Systems Ltd or their authorised representative.



The music equipment shown consists of a hard-drive player and the EcoTec Systems Ltd SDV1109-A Eight zone mixer / equaliser.

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