

VARIODYN ONE

Direct Drive Power Amplifiers with Battery Charger

APPLICATION

Power amplifiers are used to amplify the audio signal and VARIODYN® ONE offers a range of Class D Power Amplifiers to provide you flexibility to choose an appropriate model as per your project's requirement.

4XD125B and 4XD250B are 4 channel amplifiers with inbuilt battery charger. They provide 125 W and 250 W per channel respectively.

All amplifier channels are independent from each other allowing use of any one channel as a backup. This could be for the other 3 channels or for amplifier channels in other amplifiers with the same or lower output power.

Two different Class D Power Amplifiers with inbuilt Battery Charger are:

4XD125B

4 Channel 125 W Per Channel with inbuilt Battery Charger

The 1U 19-inch rack mountable direct drive 4 channel voice alarm amplifier unit provides 4x125 W power output. Each channel provides an independent 100 V audio output. The unit has an integral battery charger for charging 24 V lead acid batteries of up to 65 Ah used to provide standby supply in the event of mains failure. It is designed for direct integration and is fully compatible with VARIODYN® ONE INC.

4XD250B

4 Channel 250 W Per Channel with inbuilt Battery Charger

The 2U 19-inch rack mountable direct drive 4 channel voice alarm amplifier unit provides 4x250 W power output. Each channel provides an independent 100 V audio output. The unit has an integral battery charger for charging 24 V lead acid batteries of up to 105 Ah used to provide standby supply in the event of mains failure. It is designed for direct integration and is fully compatible with VARIODYN® ONE INC.

Mains Supply: The mains power to the unit is via an IEC connector having an integral protection fuse.

External Battery Supply: The external batteries connect to the unit at the 'BATT' connector and are charged by the integral temperature compensated charger. The fully monitored 24 V standby supply is used in the event of mains supply failure. Leaded temperature sensor connects to the 'BATT TEMP' connector, with the sensor positioned in between the batteries to monitor the temperature of the external batteries for automatic charge voltage adjustment. If using an external standby supply the internal battery charger must be configured as 'disabled' and the temperature sensor MUST NOT be connected to the 'BATT TEMP' connector.



4XD125B - 585030



4XD250B - 585031

General Indicator:

- Mains Power (green LED)
- System Fault (yellow LED)
- Battery Power (yellow LED)
- Signature Ring (green / yellow LED)

Channel Indicator:

- Power (green LED)
- High (green LED)
- Low (green LED)
- Clip (yellow LED)
- Error (yellow LED)

100 V Outputs:

There are four 100 V outputs available at the connector marked 'SPK 1/2 OUT' and 'SPK 3/4 OUT' at the back of the unit. These outputs are for connection to VARIODYN® ONE INC.

Audio Input:

The control inputs are via a connector marked 'CONTROL I/F' at the back and can be connected to VARIODYN® ONE INC.

Extension Interface:

The 'EXTENSION INTERFACE' provides 'Common Fault' output by voltage free contacts. External input is for system fault reset and automatic fans test.

FEATURES AND BENEFITS

- 4-channel Direct-Drive amplifier for voice alarm application that utilise industry standard 100 V speakers
- 4 independent amplifier channels
- One of four amplifier channels can be used as a backup channel
- High efficiency (>80% typical) Class D Amplifiers
- Delivers maximum possible power under any overload or overdrive condition to maintain intelligibility of voice messages
- Integrated temperature compensated battery charger designed to EN54 Part 4, capable of charging up to 65 Ah battery pack for 4XD125B Amplifier and 105 Ah for 4XD250B Amplifier
- Intuitive front facia/front panel to ensure you easily understand the device status
- Microcontroller based extensive self-monitoring and control
- System control and monitoring via VARIODYN® ONE INC controller
- Protection against overheating
- Protection against overload & wiring short

TECHNICAL DATA	AMPLIFIER 4XD125B	AMPLIFIER 4XD250B
Output power EN54-16 (mains powered)	4x125 W / channel into a load of 80 Ω	4x250 W / channel into a load of 40 Ω
Output power EN54-16 (bat. powered)		
Weight	approx. 9.05 kg	approx. 12 kg
Heat dissipation (idle) mains powered	60 Wmax.	60 Wmax.
Battery powered (channels enabled)	21 Wmax.	33 Wmax.
Battery powered (channels disabled)	5 Wmax.	6 Wmax.
Mains fuse	F6,3 AH 250V	F10 AH 250V
Nominal mains voltage	230 V AC 50 to 60 Hz + 10% to -15%	230 V AC 50 to 60 Hz + 10% to -15%
Battery capacity and type	Valve regulated lead-acid battery: 38 Ah min. 65 Ah max	Valve regulated lead-acid battery: 65 Ah min. 105 Ah max
Battery operating voltage range	21,5 V DC to 28,5 V DC	21,5 V DC to 28,5 V DC
Battery charger current limit	3,4 A	6,5 A
Battery source impedance	0,20 Ωmax.	0,12 Ωmax
Battery charger start-up	18 V DC min. battery voltage	18 V DC min. battery voltage
Battery under voltage cut-off protection	20 V DC	20 V DC
Overall dimensions in mm	45 height (1U) x 483 width x 402 deep	90 height (2U) x 483 width x 402 deep
Colour	RAL 810-M (Enclosure)	RAL 810-M (Enclosure)
Ambient operating temperature	-5°C to +55°C	-5°C to +55°C
Storage temperature	-10°C to + 55°C	-10°C to + 55°C
Relative humidity	Up to 93% (non condensing)	Up to 93% (non condensing)
Air flow direction	from front to rear of the amplifier unit	from front to rear of the amplifier unit
Function	Class D, transformerless 100 V outputs	Class D, transformerless 100 V outputs
Frequency response at the rated power	20 Hz to 22 KHz ± 3 dB	20 Hz to 22 KHz ± 3 dB
Distortion at the rated power (resistive load)	< 0,3% THD at 1 kHz sine wave	< 0,3% THD at 1 kHz sine wave
Signal to noise ratio at rated power	90 dB (A - weighted)	90 dB (A - weighted)
Maximum load capacitance	200 nF #	200 nF #
Channel separation	> 75 dB	> 75 dB
Voltage gain	42dB	42 dB
Input sensitivity	OdBu for rated output power	OdBu for rated output power
Input impedance (balanced)	20 KΩ	20 KΩ
Efficiency at a maximum load	> 80% typical (Battery powered)	> 80% typical (Battery powered)
Self-oscillation frequency at idle	300 kHz (± 20 kHz)	290 kHz (± 20 kHz)
Overload protection	Protected against short-circuit or output overload	Protected against short-circuit or output overload
Thermal protection	Protected against overheating by temperature controlled fans	Protected against overheating by temperature controlled fans
Approvals	EN54 part 4 and 16	EN54 part 4 and 16

* Excessive load capacitance may result in a degradation in performance.

ORDER INFORMATION

MODEL NAME	PART NO.	DESCRIPTION	STANDARD HEIGHT
4XD125B	585030	4 Channel 125 W Class D Amplifier with Inbuilt Battery Charger	1 HU
4XD250B	585031	4 Channel 250 W Class D Amplifier with Inbuilt Battery Charger	2 HU