

365kW CLASS-D AMPLIFIER

AGI-MF-120V-2000A-3P-CL-D

These amplifiers are known for their high efficiency and performance, making them an excellent choice for applications requiring precision and reliability. It occupies minimal floor footprint, and this is a key advantage, especially in environments where space is limited. Our amplifiers are driven through digitally controller PWM converters which switches at high frequency to achieve compact design.

Our amplifier caters to all the 3 main building blocks of a shaker requirements namely the a) Armature power supply, b) Field control power supply and c) Anti-magnetic power supply.

Improved Shaker Performance:

Zepco's amplifiers offer precise control, ensuring that the shaker operates at optimal performance levels, which can lead to more accurate and repeatable test results. Enhanced power and efficiency also mean that the shaker can achieve higher levels of vibration and acceleration with less energy.

- Class-D Power Amplifier for Armature Power Supply (240kVA)
- Field Power Supply (120kVA)
- Degauss Power Supply (5kVA)
- Modular and Compact
- Energy Efficient
- Precise and Accurate
- Simple and easy HMI interface
- Network Connected
- Configurable to multiple Shaker ratings



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SiC based Power Electronics: The Power Modules used in our amplifiers make use of the superior performance capabilities of the latest SiC power switching devices to deliver improved power densities.

Fully Digital Control: These amplifiers are driven by digital control algorithms, which offer easier tuning to various shakers platforms.

Reduced Energy Consumption:

High efficiency of Zepco's amplifiers means less energy is required to drive the shaker. This results in significant cost savings, especially in long-term operations, as less power is needed to maintain the same performance levels.

Propelling up and ahead

More Reliability and Stability: With superior engineering and modern design, these amplifiers ensure stable operation over extended periods. Their reliability reduces the likelihood of failures, meaning fewer disruptions in testing and more consistent results over time.

Lower Operating Costs:

By using less energy and being more reliable, the overall cost of operating the shaker system decreases. Additionally, the reduced wear and tear on the system and fewer maintenance needs help lower the total cost of ownership.

Simplified Shaker Operation:

Our amplifiers come with user-friendly HMI interface & network connectivity, making it easier to locally and remotely operate the shaker system.

Interlocks with User Subsystems: Configurable Potential free inputs and outputs for interface with other User end sub-systems like Chillers, Cooling Systems, Shaker Protection Feedback etc.,

Reduced Floor Space Requirements:

The compact design of these amplifiers is a major advantage for labs or testing facilities with limited space. By reducing the size of the required equipment, users can free up valuable floor space for other equipment or operations.

Universal adaptability:

The added flexibility of being able to match these amplifiers to any manufacturer's electrodynamic shaker, even if not originally designed together, highlights the versatility and adaptability Zepco's systems. This can be especially useful for labs or testing facilities that might be using a range of shaker models from different manufacturers but want the performance benefits of digital amplifier.

These benefits combined make our amplifiers an attractive solution for many applications, especially in industries like aerospace, automotive, electronics, and other fields that rely on vibration testing.

SYSTEM SPECIFICATIONS

Power Architecture

Amplifier type	Modular
Cooling	Class-D Switching Mode PWM
Impedance Matching	Forced Air cooled
Amplifier Drive Current Rating	RLC with Back EMF Accounted
Drive Voltage Rating	2000 ARMS
Power Factor	120 VRMS
Redundancy	>0.95
Operating Temperature	n+1 Redundancy
Frequency of Operation	50° Celsius
Crest Factor Input	0 – 4500 Hz
Crest Factor Output	3
Efficiency	3
DC Bias Voltage	>90%
	Not greater than 0.5V and adjustable.

Electrical Architecture

Transformer Based Input Rectifier	
Switching Devices	SiC based MOSFET or IGBT
Switching Frequency	100 kHz
Total Harmonic Distortion at Rated Output	<1%
Signal Noise Ratio	Better than 70dB

Mechanical Architecture

Acoustic Noise	Less than 80dBA at 1mtr
Humidity	95% non-condensing
Cooling System	Air cooled
Dimension (H x W x D)	2000mm x 3000mm x 1000mm

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IP Rating

IP23 Enclosure

Logic, Communication, Remote Operating Requirements

Logic Controller

Analog Measurements & Display

Communication Protocol

User Interface

Remote Operation and Controller

DSP/Micro-controller Based

Load temperature, voltage, current, field voltage, field current, degauss voltage, degauss current
RS485 or CAN Interface

Touch Screen – HMI

Ethernet or RS485 or any other protocol for remote operation over and above 50m

Protection

Amplifier Protection

Other Protection

Shutdown Operation

Auxiliary Protection

Load Type

Logic protection such as no modulation, modular failure, communication failure

Output over voltage, output over current, output short circuit, over temperature

Smooth shutdown operation when abnormal or protection signals are activated

5 or as per user requirement

Either floating (isolated) or grounding type

DC Magnetic Power Supply

Type

Voltage

Current

Variable voltage or current controlled

300V variable

400A variable

DC Magnetic Field Power Supply

Output Voltage

Type

Voltage

Current

500Vdc

Variable voltage or current controlled

500V variable

0-10A variable