

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.

Key Features

- 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



Improved Shaker Performance:

Our 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.

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.

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 & 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	Modular
Amplifier type	Class-D Switching Mode PWM
Cooling	Forced Air cooled
Impedance Matching	RLC with Back EMF Accounted
Amplifier Drive Current Rating	2000 ARMS/6000APk
Drive Voltage Rating	120 VRMS
Power Factor	>0.95
Redundancy	n+1 Redundancy
Operating Temperature	50° Celsius
Frequency of Operation	0 – 4500 Hz
Crest Factor Input	3
Crest Factor Output	3
Efficiency	>90%
DC Bias Voltage	Not greater than 0.5V and adjustable.
Electrical Architecture	
Transformer Based Input Rectifier	
Switching Devices	SiC based MOSFET
Switching Frequency	100 kHz
Total Harmonic Distortion at Rated Output	<1%
Signal Noise Ratio	Better than 70dB
Acoustic Noise	Less than 80dBA at 1m
Humidity	95% non-condensing
Dimension (H x W x D)	2000mm x 3000mm x 1000mm
IP Rating	IP23 Enclosure
Logic, Communication, Remote Operating Requirements	
Logic Controller	DSP/Micro-controller Based
Analog Measurements & Display	Load temperature, voltage, current, field voltage, field current, degauss voltage, degauss current
Communication Protocol	RS485 or CAN Interface

User Interface	Touch-screen HMI
Remote Operation and Controller	Ethernet or RS485 or any other protocol for remote operation over and above 50m
Protection	
Amplifier Protection	Logic protection such as no modulation, modular failure, communication failure
Other Protection	Output Over Voltage, Output Over Current, Output Short Circuit, Over temperature
Shutdown Operation	Smooth shutdown operation when abnormal or protection signals are activated
Auxiliary Interlocks	5 or as per user requirement (configurable)
Load Type	Either floating (isolated) or grounding type
Field Power Supply	
Type	Variable voltage or current controlled
Voltage	300V variable
Current	400A variable
DC Magnetic Power Supply (Degauss)	
Output Voltage	500Vdc
Type	Variable voltage or current controlled
Voltage	500V variable
Current	0-10A variable

Note: The technical data present in this document is for information purpose only and is subject to change without prior notice. Should you require more information, please reach us at info@zepcotek.com