SA
Digital Amplifiers

Switching Amplifier Systems

dynamic solutions

Model SA-240 (R)

D Class 240 KVA

Vibration Amplifier Performance Specification

All **SA-240 "D Class" systems** use insulated-gate bipolar transistors (IGBT) and are fully instrumented vibration amplifiers. They provide field power, cooling power and protection interlocks in addition to high quality power amplification.

The **SA-240, 240 KVA replacement amplifier** as quoted will consist of six bays including a full complement of power modules and a field supply for operating the customer's specified shaker (LE 340/4022) at full force, with power to spare.

General

This specification describes a SA-240 which is a complete power amplification system including armature power amplification, field power supply, full instrumentation and all necessary safety interlocks for equipment and personnel protection. Amplifier is manufactured and tested in accordance with ISO 9001

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Model SA-240

Vibration Amplifier Performance

1. MODULAR CONSTRUCTION

1.1 Power Modules

Digital IGBT power amplification modules supplied with this amplifier are rated at 15 kva each. Dynamic Solutions Power Modules are also available in 5, 10, 20, 25 and 30 kva sizes and are selected as appropriate for the specific application. Modules convert the digital pulse string from the system modulator to a high power analog output matching the system drive signal. Modules are generally connected in parallel to facilitate higher current and load sharing.

1.2 D Class Logic Module

The control module houses the system modulator (converts the analog input signal to an equal digital pulse string), current limiting, interlock circuitry and system alarms.

1.3 Output Matching Transformer

Space is provided for an output-matching transformer if needed, not installed as standard in this system.

1.4 Main Frame

All of the above are housed in an attractive main frame, which also provides the AC & DC power distribution as well as vacant space for optional features.

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2.0 INPUT CHARACTERISTICS

2.1 Input Voltage: A universal input transformer allows a system to be quickly connected for any of the popular forms. Specify form when ordering.

A 220/380 VAC, 3 phase, 5 wire WYE.
B. 230/400 VAC, 3 phase, 5 wire WYE.
C. 240/416 VAC, 3 phase, 5 wire WYE.
D. 460 VAC, 3 phase, 4 wire Delta.
E. 277/480 VAC, 3 phase, 5 wire WYE.

2.2 Input Voltage Range: +/- 10% of nominal.

2.3 Input Frequency: 47 to 63 Hz.

2.4 Input Disturbance Tolerance: System will deliver full power for 10 milliseconds
when subjected to loss of input power

3.0 BLOWER POWER

3.1 Form: N/A

3.2 Protection: N/A.

4.0 OUTPUT

4.1 Output Power: 240 KVA

4.2 Output Voltage: 0 to 100 VAC RMS, 0-141.4 VAC peak.

4.3 Line Regulation/Stability: Less than 0.05% for a 10% input voltage change.

4.4 RMS Output Current: 2400 amps

4.5 Peak Output Current: 7200 amps peak

4.6 Overload: 260% for 10 seconds, short circuit 0.5 seconds. Trip time is proportional to overload and auto adjust for maximum system protection.

4.7 Frequency Range: Full power, 2 Hz to 3000 Hz.

4.8 Signal To Noise Ratio: Greater than 70 dB below full output with input shorted.

4.9 Total Harmonic Distortion: <1% measured with a resistive load at 100% of rated power

4.10 Input Sensitivity: 1.5 Vrms for full output of 110 Vrms.

4.11 Input Impedance: 10 K ohms for direct coupled

4.12 Switching Rate Frequency: 120 Khz

5.0 FIELD SUPPLY

5.1 Voltage: 200 Volts DC

5.2 Current: 400 Amps DC

5.3 Protection: Fuses

6.0 INTERLOCKS & SAFETY CIRCUITS

6.1 Automatic Amplifier Protection Interlocks:.

A. Input over /under voltage
B. Shaker over-temp
C. Shaker over-travel
D. Logic fault.
E. Output over voltage and current

7.0 ENVIRONMENTAL / MECHANICAL

7.1 Cooling: Internal cooling fans

7.2 Heat Loading: 240 KW at full load, proportionally reduced at lighter loads.

7.3 Temperature Range: 0 to 40 degrees C.

7.4 Humidity: 0 to 95%, non condensing.

7.5 EMI/RFI: Per FCC part 15J, Class A for both conducted and radiated.

7.6 Dimensions: 130 x 74.8 x 31.49 inch

7.7 **Weight:** 7500 lbs.