

The AE Techron **7548** amplifier is a DC-enabled, high-powered unit designed to provide very low noise and fast slew rates. A single 7548 has an output capability of 100 amperes peak and 200 volts peak when driving typical MRI gradient coil loads. It can output a 40 mSec pulse with up to 105 amperes peak current into a 1-ohm load. If more current is needed, up to four amplifiers can be combined in series or parallel and operate as a single system.

The 7548 can operate in either voltage or current mode and features robust output devices and a power range of over 3300 watts RMS. It can safely drive a wide range of resistive, inductive loads.

Typical use includes as a power source for EMC testing in applications that require both continuous AC or DC signals and significant short term (burst) signals. It can be combined in a three-phase system ideal for MIL-STD-704F (AC and 28VDC tests).

### Performance

#### Frequency Response:

DC – 30kHz +0.1 – 0.5dB

#### Phase Response:

+/- 8.3 degrees (10Hz - 10kHz)

#### Unit to Unit Phase Error:

+/- 0.1 degrees at 60Hz

#### Maximum Continuous Output Power:

3300 watts RMS

3300 watts RMS

#### Output Offset:

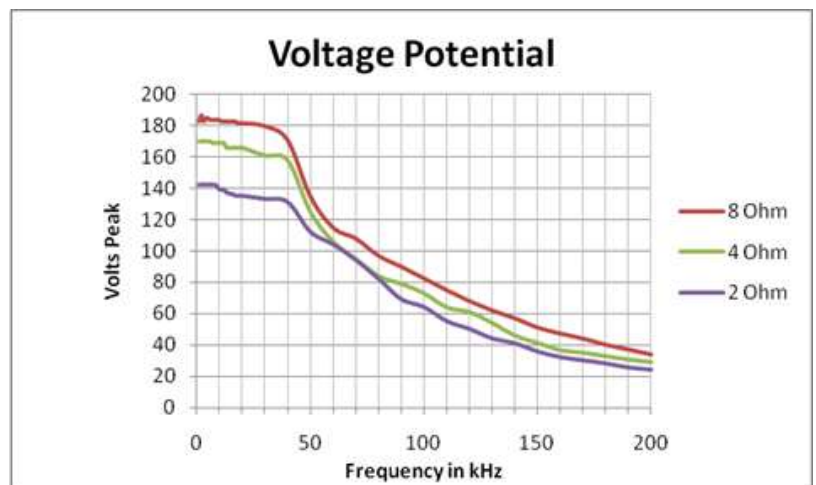
**7548:** Less than 5 mV, field adjustable to less than 1 mV



## 7548 SPECIFICATION SHEET

### Features

- Over 12,000 watts peak for 40 mSec and 5,500 watts peak continuous into a 1-ohm load.
- 40 mSec pulses of up to 105 amperes peak into a 1-ohm load.
- System output of 800 volts and 70 amperes maximum are possible with multiple, interconnected amplifiers.
- Frequency bandwidth of DC to 50 kHz at rated power; DC to 100 kHz at reduced power.
- Rugged chassis for stand-alone or rack mounted operation. No additional power supplies are required.
- Protection circuitry protects the *AE Techron 7548* from input overloads, improper output connection (including shorted and improper loads), over-temperature, over-current, and supply voltages that are too high or low.
- Optional “P” version offers precision control of output offset, DC drift and gain linearity.
- Shipped ready to operate from 208-volt ( $\pm 10\%$ ) three-phase AC mains. Operation from 400-volt ( $\pm 10\%$ ) AC mains are available on request.



## AC Specifications

| Ohms | PEAK OUTPUT                     |      |                              |      |                            |      | RMS OUTPUT                   |      |                            |      |       |  |
|------|---------------------------------|------|------------------------------|------|----------------------------|------|------------------------------|------|----------------------------|------|-------|--|
|      | 40mSec Pulse,<br>20% Duty Cycle |      | 5 Minute,<br>100% Duty Cycle |      | 1 Hour,<br>100% Duty Cycle |      | 5 Minute,<br>100% Duty Cycle |      | 1 Hour,<br>100% Duty Cycle |      |       |  |
|      | Volts                           | Amps | Volts                        | Amps | Volts                      | Amps | Volts                        | Amps | Volts                      | Amps | Watts |  |
| Open | 200                             | 0    | 200                          | 0    | 200                        | 0    | 141                          | 0    | 141                        | 0    | 0     |  |
| 16   | 195                             | 12   | 195                          | 12   | 195                        | 12   | 138                          | 8    | 138                        | 8    | 1170  |  |
| 8    | 183                             | 23   | 183                          | 23   | 183                        | 23   | 129                          | 16   | 129                        | 16   | 2104  |  |
| 4    | 165                             | 41   | 165                          | 41   | 165                        | 41   | 117                          | 29   | 117                        | 29   | 3381  |  |
| 2    | 150                             | 75   |                              |      | 86                         | 43   |                              |      | 61                         | 30   | 1848  |  |
| 1.5  | 134                             | 90   |                              |      |                            |      |                              |      |                            |      |       |  |
| 1    | 116                             | 105  |                              |      |                            |      |                              |      |                            |      |       |  |
| 0.5  | 66                              | 112  |                              |      |                            |      |                              |      |                            |      |       |  |

**7548P:** Less than 200  $\mu\text{V}$ , field adjustable to less than 100  $\mu\text{V}$ ; adjustment via 20-turn precision trim control; DC offset adjustment range is  $\pm 10$  mV with about 0.9 mV per turn

**Output Offset Current:**  
Less than 10 milliamperes DC

**DC Drift:**

**7548:**  $\pm 1.5$  mV

**7548P:**  $\pm 200$   $\mu\text{V}$  (from cold to maximum operating temperature);  $\pm 75$   $\mu\text{V}$  (after 20 minutes of operation)

**7548P Gain Linearity** (over input signal, from 0.2 V to 5 V):

**DC:** 0.0125%

**AC:** 0.030%

**Input Characteristics**

**Balanced with Ground:**

Three terminal barrier block connector  
20k ohm differential

**Unbalanced:**

BNC connector, 10k ohm single ended

**Gain:**

**Voltage Mode:** 20 volts/volt

**Current Mode:** 20 amperes/volt

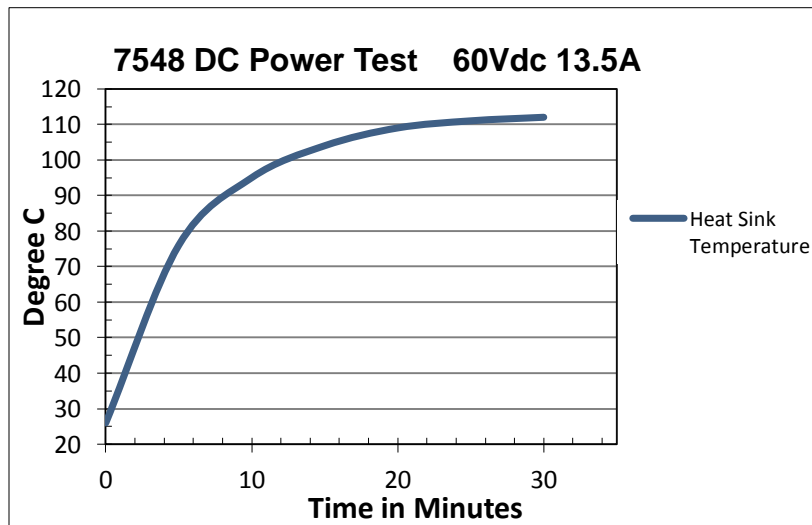
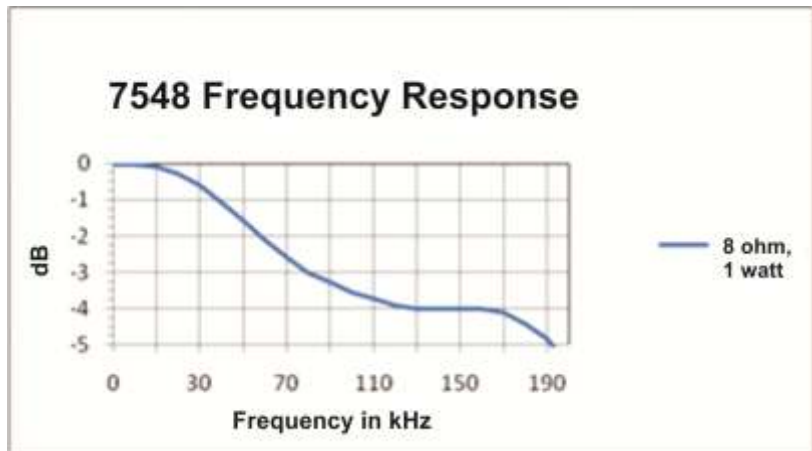
**Residual Noise:**

DC - 30kHz: Less than 75 microvolts

DC - 100kHz: Less than 1 millivolt

**Slew Rate:**

41 volts per microsecond



## Display, Control, Status

### Front Panel

#### LED Displays indicate:

Ready, Standby and Fault conditions in the output stage

#### LCD Display:

Lists type of fault condition and gives suggested corrective action

#### Soft Touch Switches for:

Run (Enable), Stop, Reset

#### User Configurable:

LCD display can be configured for up to four simultaneous displays reporting one, two or all four of the following: Voltage Peak, Voltage RMS, Current Peak, and Current RMS

## Physical Characteristics

### Chassis:

All aluminum construction designed for stand-alone or rack-mounted operation with black chassis; the amplifier occupies five EIA 19-inch-wide rack units

### Weight:

103 lbs. (46.7 kg)

### AC Power:

Three-phase, 208 VAC  $\pm 10\%$ , 47-60 Hz, 20A AC service (400 VAC  $\pm 10\%$ , 15A version available)

### Operating Temperature:

10°C to 50°C (50°F to 122°F), Maximum Output Power de-rated above 30°C (86°F)

### Humidity:

70% or less, non-condensing

### Cooling:

Internal fans forced air, 250 cfm

### Dimensions:

19 in. x 22.8 in. x 8.75 in. (48.3 cm x 57.9 cm x 22.3 cm)

## Protection

### Over/Under Voltage:

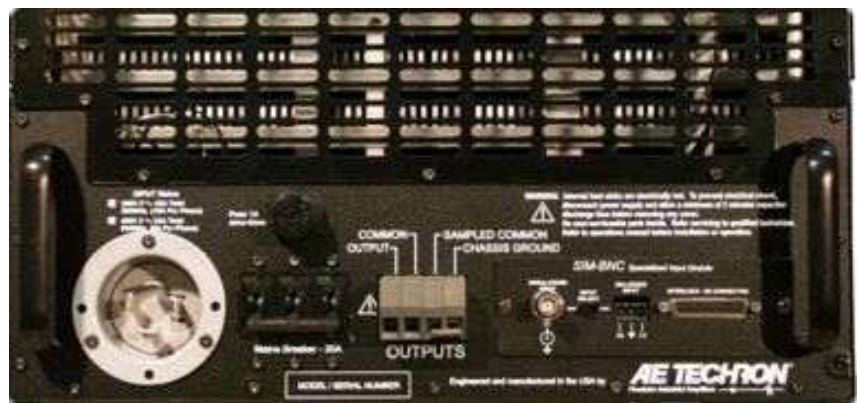
$\pm 10\%$  from specified supply voltage amplifier is forced to Standby

### Over Current:

Breaker protection on both main power and low voltage supplies

### Over Temperature:

Separate Output transistor, heat sink, and transformer temperature monitoring and protection



*AE Technon Sales Representative*