- **195 Volt**
- **110 Amp**

7548 GRADIENT POWER AMPLIFIER

7548 Pulsed Output - Current Mode

	PULSE DURATION / OFF TIME (mS)						
	DC*	500 / 500	100 / 100	10 / 20	170 / 1000	25 / 1000	4 / 100
Output (±A Peak)	8	16	15	22	59	110	110

**DC 1Ω*

The AE Techron 7548 is a 100A, DC-enabled gradient amplifier with an integrated power supply that offers wide bandwidth and exceptional control of drift and distortion. It has enough current and voltage to drive coils used in larger animal systems. Making it a great choice for department level systems in education or research. Its linear design provides a very-low noise floor and fast current rise times. Because the 7548 has no ripple noise, no synching with the console is required.

The AE Techron brand is known throughout the world for its robust, low-noise gradient amplifiers as well as its product service and support.

Features

- Output of up to 110 amperes peak, 195 volts.
- 4-quadrant linear design.
- Blanking feature lowers the noise floor on the amplifier by shutting down the output stage. This action occurs in less than 10 µs.
- Current mode response: DC-5 kHz (compensation dependent); Voltage mode response: DC-20 kHz at rated power.
- Robust, linear power supply results in extremely low noise; bi-level switch design limits heat dissipation to output devices.
- Provides precision control of output offset, DC drift and gain linearity.
- Protection circuitry guards against input overloads, improper output connection (including shorted and improper loads), over-temperature, over-current, and supply voltages that are too high or low.
- Shipped ready to operate from 208-volt (±10%) 3-phase AC mains; 400-volt model available on request.

Performance

Specification typical at 25°C ambient. Unless otherwise noted; testing was done in Current mode with a load = 500 µH +100 mΩ.

Peak Current Limit	112 A
Gain Linearity* (over input signal, from 0.2V to 5V)	**DC:** 0.0125% **AC:** 0.030%
Output Offset (adjustable to zero)	**Voltage Mode:** Less than ±400 µV **Current Mode:** ±5 mA
Input Characteristics	**Three-Terminal Barrier Block Connector:** Balanced with ground; 20 kΩ differential **BNC Connector:** Unbalanced; 10 kΩ single ended **Max Input Voltage:** ± 1 V balanced or unbalanced **Common Mode Rejection:** better than –68 dB with 5 V input
Output Impedance	**0Current Mode (effective):** 2000 Ω **Voltage Mode (typical):** 3.2 mOhm in Series with 2.2 µH
Load	**Current Mode:** 500 µH + 200 mΩ **Adaptable Range:** 5 µH to 2.5 H, 0.01 Ω to 20 Ω
Current Mode Response	–3 dB at 5 kHz (compensation dependent)
Current Settling Time	**Ramp 0 A to ±50 A or ±50 to 0 A:** 20 µs to within 1.0 A or 1% 35 µs to within 200 mA, 0.2%
Total Harmonic Distortion	**Current Mode:** Less than 0.1% **Load:** 500 µH + 100 mΩ
Noise Floor (when Blanking circuit is enabled)	5 µA or less
DC Drift	**Self Heating Drift, 0 to ±60 A:** 5 mA/10 minutes maximum
Noise Output	**10 Hz to 1 kHz:** 0.2 mA **1 kHz to 60 kHz:** 0.05 mA
Ripple Noise Output	None
Slew Rate, Voltage Mode:	41 V/µs
Remote Control and Monitoring (back-panel D connector)	**Current Monitor:** ± 1 V / 20 A ± 1% **Reporting:** System Fault, Over Temp, Over Voltage, Over Load **Control:** Force to Standby, Remove from Standby, Reset after a Fault
Amplifier Protection	**Over Load/Distortion (IOC):** Shutdown or clipped output **Current vs Time (ODEP):** Clipped output **Each heat sink temperature:** Shutdown 105°C **Overvoltage Shutdown:** 229 VAC / 440 VAC **Undervoltage Shutdown:** 187 VAC / 360 VAC

*Gain Linearity Accuracy was measured in Voltage mode with the amplifier driven into a 10Ω load with between 0.1VDC and 6VDC or between 0.2VAC and 5VAC presented at its inputs.

Status Indicators (front panel)	LEDs indicate a status of Run, Ready or Standby, and Fault conditions.
Controls (front panel)	**Soft Touch Switches:** Run (Enable), Stop and Reset functions.
Controls (back panel)	**AC Mains Switch and Circuit Breaker:** Dual-function power switch and circuit breaker; rating: 20A for 208 volts or 15A for 400 volts. Turn off and then back on to reset.
Connectors (back panel)	**Power Connection:** NEMA-style locking receptacle; matching AC connector also included. **Signal Output:** 4-position terminal barrier block (OUTPUT/COMMON/ SAMPLED COMMON/CHASSIS GROUND); resistor between SAMPLED COMMON and CHASSIS GROUND terminals is a 2.7-ohm, 2W, 5%, metal-oxide resistor. **Signal Input:** User-selectable unbalanced BNC or balanced Barrier Strip **Interlock I/O Connection:** 25-pin D connector provides for remote monitoring and control functions
Power Requirements	Three-phase, 208 VAC ±10%, 47-60 Hz, 20 Amp AC service; (400 VAC ±10%, 15 Amp service model available).
Thermal Requirements	**Operating Temperature:** +10°C to +50°C (+50°F to +122°F). Maximum output power de-rated above 30° C (86°F). **Storage:** –30°C to +85°C (–22°F to +185°F). **Humidity:** 70% or less, non-condensing.
Physical Characteristics	**Dimensions:** 19” L x 8.75” H x 22.8” D (48.3 cm L x 22.3 cm H x 57.9 cm D). **Cooling:** Forced air cooling from front to back through removable filters via four 100 CFM fans. No space is required between rack-mounted amplifiers. Air filters are removable from the rear via one fastener per side and may be eliminated if cabinet filtration is provided. **Airflow:** 400CFM. **Weight:** 103 lbs (46.7 kg). **Shipping Weight:** 115 lbs (52.2 kg).