



## 7796HC

### Precision, DC-enabled Linear Power Amplifier

#### Performance Overview:

AC Power (up to 20 kHz):	2550 watts RMS
Small Signal:	28V p-p to 250 kHz
For High-Power Applications to:	100 kHz
DC Power:	85A at 13.5V DC; 70A at 28V DC
Slew Rate:	>35 V/ $\mu$ s
Output Voltage:	$\pm$ 80 Vp
Output Impedance:	3.2 m $\Omega$ in series with 2.2 $\mu$ H

#### Features:

- Up to 85A continuous at 13.5V DC
- Up to 200A in-rush current capability
- Stable when driving highly capacitive loads
- $\pm$ 80V DC capable
- Four-quadrant operation (source and sink)
- Field-selectable controlled-voltage or controlled-current modes of operation.
- Can be switched between rail supply modes to optimize for various load impedances
- Protection circuitry protects the amplifier from input overloads, improper output connection (including shorted and improper loads), over-temperature, over-current, and supply voltages that are too high or low.

#### For testing to these Specifications:

<b>AVIATION</b>	Ford ES-XW7T-1A278-AC
MIL STD 704	GLloyd VI-7-2
<b>AUTOMOTIVE STANDARDS</b>	GMW 3097 (2006)
ISO 7637-2	GMW 3172
ISO 11452-8 and -10	MAN 3285
ISO 16750-2	MBN 10284-2
SAE J1113-2	Nissan 28400 NDS 02
<b>AUTOMOTIVE OEM</b>	PSA B21 7110 Rev.C, Ad. 2010-05
Chrysler CS-11809 (2009)	Renault 36.00.808/--G
Chrysler CS-11979	Renault 36.00.808/--H
Chrysler DC-11224 Rev.A	Renault 36.00.808/--J
DaimlerChrysler DC-10614	Renault 36.00.808/--K
DaimlerChrysler DC-10615	Renault 36.00.808/--L
DaimlerChrysler DC-11224	Renault 36.00.808/--L
EMC-CS-2010JLR V1.1 (2011-01)	Tata TST/TS/WI/257
Fiat 9.90110	Volvo STD 515-0003
Ford EMC-CS-2009.1	VW TL 825 66

AE Techron's **7796HC** amplifier is a DC plus audio-bandwidth AC amplifier that can be used to simulate ripple noise, drop-outs, surges and ground-shift noise as is required by a variety of standards for DC-powered electronics in the aviation and automotive industries..

A single 7796HC makes a very good choice for 13.5V DC-based power susceptibility test standards for high-current-draw EUTs (up to 85A). With multi-amp configurations capable of up to 600A, a DC-100 kHz+ bandwidth, and the ability to both source and sink, the 7796HC is your best solution for high-current DC Conducted Immunity testing.\*

\*208V AC version ONLY; 400V AC version not available.

## Specifications

### Performance

Testing performed at 208V AC. 7796HC amplifiers can operate from 208V AC  $\pm 10\%$ . Since these amplifiers have an unregulated power supply, low line conditions may slightly affect the maximum voltage potential.

All testing was performed in Controlled-Voltage (CV) mode. Accuracy was measured when driven into a 10-ohm load with between 0.1V DC and 6V DC or between 0.2V AC and 5V AC presented at its inputs.

**Frequency Response, DC-30 kHz** (1 watt into 8 ohms):  
+0.1 to -0.5 dB

**Maximum Continuous Output Power:** 2550 watts RMS

**Slew Rate:**  $>35$  V/ $\mu$ s

**Phase Response** (10 Hz - 10 kHz):  $\pm 8.3$  degrees

**Unit to Unit Phase Error:**  $\pm 0.1$  degrees at 60 Hz

**Output Offset:**  $<\pm 200$   $\mu$ V

**Output Offset Current:**  $<10$  mA, DC

**Residual Noise, 10 Hz to 20 kHz:**  $<250$   $\mu$ V ( $<0.25$  mV)

**THD** (DC - 20 kHz):  $<0.25\%$

### DC Drift,

**From Cold to Maximum Operating Temp:**  $<\pm 400$   $\mu$ V  
**After 20 Minutes of Operation:**  $\pm 200$   $\mu$ V

**Output Impedance:** 3.2 m $\Omega$  in Series with 2.2  $\mu$ H

### Input Characteristics,

**Balanced with ground:** Three terminal barrier-block connector, 20 k $\Omega$  differential

**Unbalanced:** BNC connector, 10 k $\Omega$  single-ended

### Gain,

**Voltage Mode:** 20 volts/volt

**Current Mode:** 20 amperes/volt

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

**DC:** 0.0125%

**AC:** 0.030%

**Max Input Voltage:**  $\pm 10$ V, balanced or unbalanced

**Input Impedance:** 20 k $\Omega$  differential

**Common Mode Rejection Range:**  $\pm 11$ V DC maximum

**Common Mode Rejection Ratio:** Better than 70 dB

### Status Display, Control, I/O

**Front Panel LED Displays indicate:** Ready, Standby, Fault

**Soft Touch Switches for:** Run, Stop, Reset

**LCD Display:** Can be configured for up to four simultaneous displays reporting one, two, or all four of the following: Vp, VRMS, Ap, ARMS. Also reports any fault conditions that occur and suggests corrective action.

**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 installed between SAMPLED COMMON AND CHASSIS GROUND is a 2.7-ohm, 2W, 5%, metal-oxide resistor

**Signal Input:** User-selectable BNC or Barrier Strip, Balanced or Unbalanced

**Interlock Connector:** 25-pin D-sub connector used for amplifier control and status applications; also used in multi-amplifier applications

### Communication Capabilities

**Current Monitor:** 20A/V  $\pm 1\%$ ; 10A/V  $\pm 1\%$  (differential configuration)

**Reporting:** System Fault, Over Temp, Over Voltage, Over Load

**Remote Control via Interlock Connector:** Force to Standby, Reset after a Fault

### 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

### Physical Characteristics

**Chassis:** The amplifier is designed for stand-alone or rack-mounted operation. The chassis is aluminum with a black powder-coat finish. The unit occupies seven EIA 19-inch-wide units.

**Weight:** 153 lbs (69 kg), Shipping 168 lbs (76.2 kg)

**AC Power:** Three-phase, 208V AC ( $\pm 10\%$ ), 47-60 Hz, 30A AC service; (400V AC model NOT 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:** Forced air cooling from front to back through removable filters via six 100ft<sup>3</sup>/min. 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.

**Dimensions (HxWxD):** 12.25" in. x 19" in. x 22.8" in.  
(31.3 cm x 48.3 cm x 57.9 cm)

*Please note that the handles are not to be used for carrying the amplifier and only lift the device using a two-person technique.*

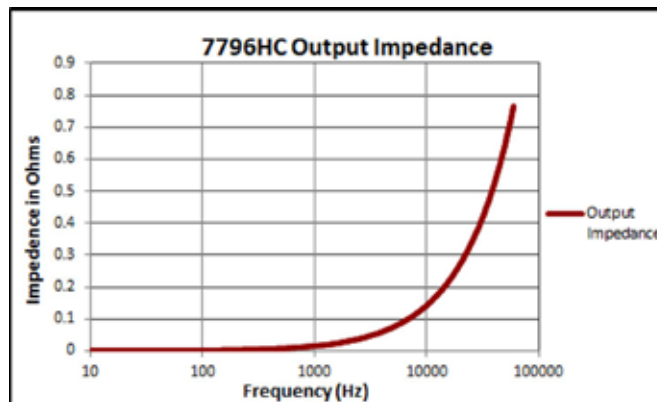
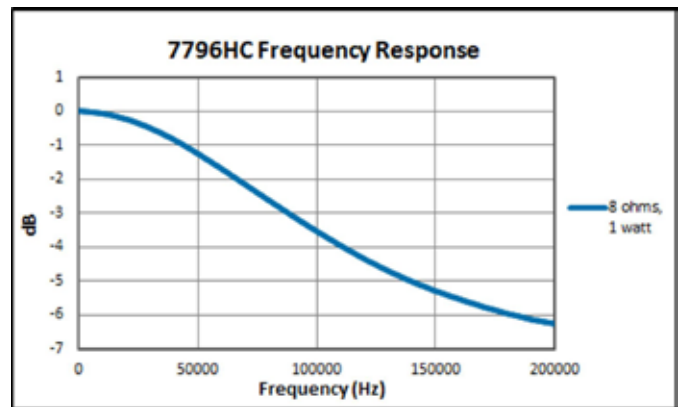
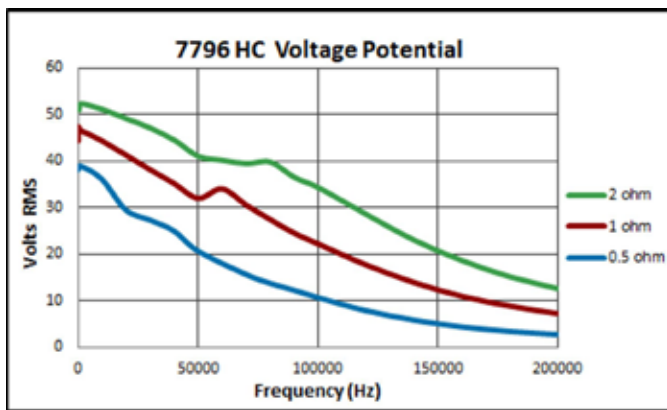
### DC Output

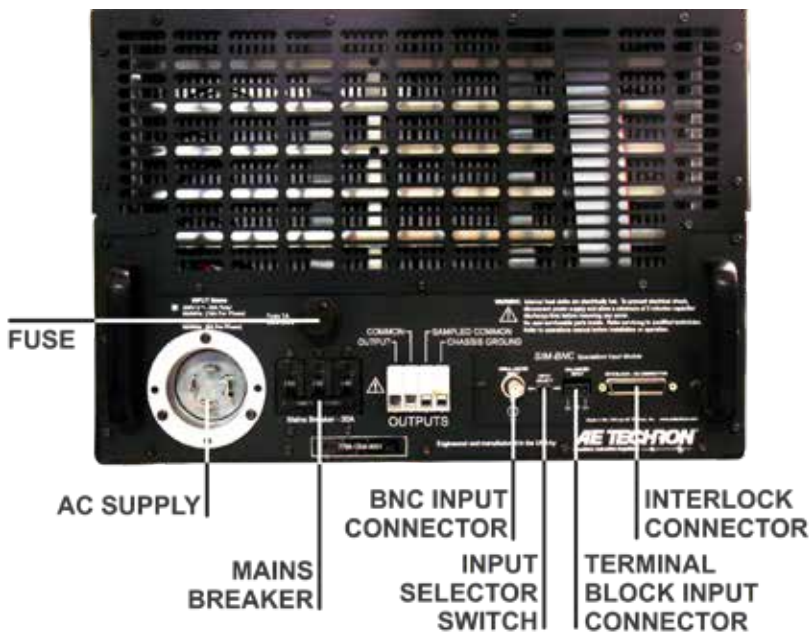
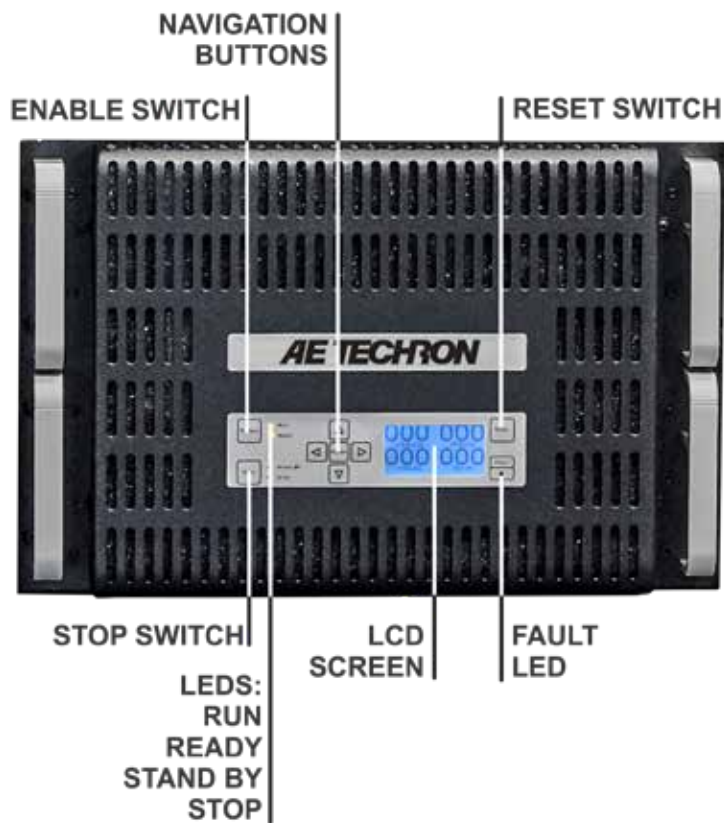
VDC	OUTPUT (Amperes)
	1 Hour, 100% Duty Cycle
13.5	90
24	90
48	80

### AC Output

Ohms	Output (RMS)		
	100 ms Surge	10 Minute 100% Duty Cycle	1 Hour 100% Duty Cycle
1.0	39V, 39A	39V, 39A	39V, 39A
0.5	37V, 74A	37V, 74A	35V, 71A
0.25	28V, 110A	27V, 107A	25V, 98A

### Performance





*AE Techron Sales Representative*