
# 7118

## High-speed AC/DC Amplifier with Precision DC Suppy

### Performance Overview:

| | |
|---|---|
| AC Power (up to 20 kHz): | 425 watts RMS |
| Small Signal (8V p-p): | 400 kHz |
| For High-Power Applications to: | 50 kHz |
| DC Power: | 9A at 48V DC |
| 40 mS Pulse (0.5Ω): | 25 Ap |
| Slew Rate: | 75 V/µs |
| Output Voltage: | ±150 Vp or ±92 Vp |
| Output Impedance: | 10 mΩ in series with 0.95 µH |

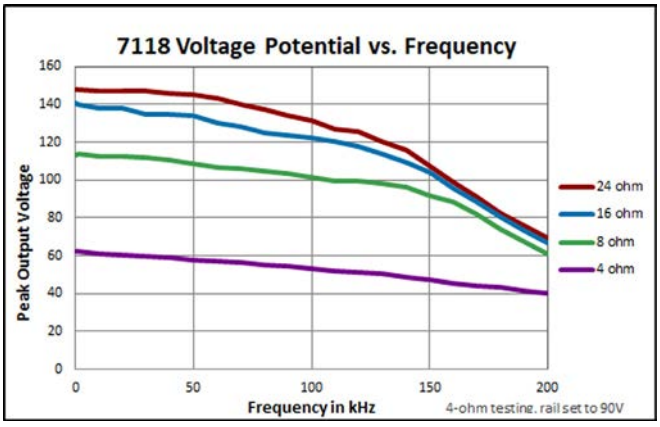
## Features

- User-variable DC offset: ±20V or ±45V.
- User-adjustable current limit: 1A to 25A.
- Compact 9.5-inch width, 2U height; weighs only 20 lbs.
- AC or DC coupled.
- Four-quadrant operation.
- AE Techron Tough: Protection from over-temperature, over-current, over/under supply voltages; will drive capacitive and inductive loads.

AE Techron's **7118** is a 425-VA, 4-quadrant, AC and DC amplifier that provides exceptional versatility and value. Compact size, user configurability, DC-Max™ topology, and AE Techron toughness make the 7118 the ideal lab partner for automotive conducted immunity testing, PSRR testing, or any application where more voltage or current is needed than is available from the signal source.

### Compact Power

The 7118 weighs just 20 pounds and fits into approxi-mately one-half of a 2U rack space, but still can output up to 425 watts RMS continuous. This makes the 7118 a great choice when size or portability are important selection criteria.



### Versatile

Front-panel user controls give the 7118 a wide range of possible uses; gain, maximum current, and DC offset can be fixed or infinetely varied. The choice of AC or DC coupling makes it suitable both for DC applications and for driving objects like coupling transformers or piezo elements that shouldn't see DC. All controls can be turned off when only a durable, high-current amplifier or DC source is needed. Or each function can be individually enabled to provide the unique set of capabilities needed at the moment.

The 7118 can produce a DC output without an input signal. DC output is independent of input signal and amplifier gain. This DC capability, when combined with an input signal from a function generator, creates a versatile DC source with high-speed ripple and dropout capabilities.

### DC-Max™

7118 is built with our new DC-Max topology. Amplifiers with DC-Max have long-term DC power that is more than 40% greater than traditional designs. This increased DC performance better matches the power requirements found in DC conducted immunity and PSRR testing.

### AE Techron Toughness

The 7118 is compact in size, but it is designed using the same conservative design rules and protection systems that have made AE Techron amplifiers the toughest audio bandwidth amplifiers available.

## AC Specifications – High-Voltage Mode

| | PEAK OUTPUT | | | | | | RMS OUTPUT | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 40 mSec Pulse, 20% Duty Cycle | | 5 Minutes, 100% Duty Cycle | | 1 Hour, 100% Duty Cycle | | 5 Minutes, 100% Duty Cycle | | 1 Hour, 100% Duty Cycle | | |
| Ohms | Volts | Amps | Volts | Amps | Volts | Amps | Volts | Amps | Volts | Amps | Watts |
| Open | 150.8 | 0 | 148.4 | 0 | 148.4 | 0.0 | 105 | 0 | 105 | 0 | 0 |
| 32 | 149.3 | 4.7 | 148.5 | 4.7 | 148.5 | 4.7 | 105 | 3.3 | 105 | 3.3 | 347 |
| 16 | 149.3 | 9.2 | 138.5 | 8.54 | 111.7 | 6.7 | 98 | 6.04 | 79 | 4.8 | 379 |
| 8 | 127.3 | 15.9 | 113.1 | 14.1 | 56.8 | 7.1 | 80 | 10 | 40.2 | 5 | 201 |

## AC Specifications – High-Current Mode

| | PEAK OUTPUT | | | | | | RMS OUTPUT | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 40 mSec Pulse, 20% Duty Cycle | | 5 Minutes, 100% Duty Cycle | | 1 Hour, 100% Duty Cycle | | 5 Minutes, 100% Duty Cycle | | 1 Hour, 100% Duty Cycle | | |
| Ohms | Volts | Amps | Volts | Amps | Volts | Amps | Volts | Amps | Volts | Amps | Watts |
| Open | 92.0 | 0 | 91.1 | 0 | 92.3 | 0 | 65 | 0 | 65.3 | 0 | 0 |
| 8 | 75.8 | 9.6 | 72.8 | 9.04 | 72.8 | 9.04 | 51.5 | 6.4 | 51.5 | 6.4 | 329.6 |
| 4 | 68.4 | 17 | 63.3 | 15.8 | 58.4 | 14.6 | 44.8 | 11.2 | 41.3 | 10.3 | 425.4 |
| 2 | 48.5 | 24 | 46.9 | 23.3 | 29.7 | 14.8 | 33.2 | 16.5 | 21 | 10.5 | 220.5 |

## DC Specifications*

| | OUTPUT (Amperes) | |
|---|---|---|
| VDC | 5 Minutes, 100% Duty Cycle | 1 Hour, 100% Duty Cycle |
| 48 | 15.1 | 9.0 |
| 24 | 10.0 | 7.5 |
| 13.5 | 7.6 | 6.0 |

*Testing performed with Rail set to 90V.

## Specifications

### Performance

AC testing was done at 1 kHz. Continuous DC power levels are lower. See DC Specifications chart.

**Frequency Response, DC–150 kHz** (1 watt): +0 to -3.0 dB

**24-Ohm Power Response** (continuous duty),
- **DC to 60 kHz:** ± 150 Vpk
- **DC to 200 kHz :** ± 70 Vpk

**Slew Rate:** 75 V/µSec

**Residual Noise,**
- **10 Hz to 22 kHz:** 250 µV (0.25 mV)
- **10 Hz to 500 kHz:** 650 µV (0.65 mV)

**Signal-to-Noise Ratio,**
- **10 Hz - 30 kHz:** –105 dB
- **10 Hz - 500 kHz:** –97 dB

**THD** (DC - 30 kHz): <0.1%

**DC Offset:** <±1 mV

**DC Drift** (after 1 minute of operation): <±200 µV

**Output Impedance:** 10 mOhm in Series with 0.95 µH

**Phase Response** (10 Hz - 10 kHz):
±6 degrees including 800 nsec propagation delay

### Input Characteristics

- **Balanced with ground:** Three-terminal barrier block connector, 20k ohm differential
- **Balanced with ground:** Back-panel DB-9 connector (pins 1, 2 and 3), 20k ohm differential
- **Unbalanced:** BNC connector, 10k ohm single ended

**Gain** (variable or fixed):
- **Voltage Mode:** 20 volts/volt
- **Current Mode:** 5 amperes/volt

**Gain Linearity** (over input signal, from 0.2V to 5V):
- **AC:** 0.05%
- **DC:** 0.025%

**Max Input Voltage:** ±10V, balanced or unbalanced

### Display, Control, Status, I/O

**Front Panel**
- **Toggle Switch for:** Power
- **I LIMIT,**
  - **Switch:** 25A fixed or variable
  - **Variable Control Knob:** 1 - 25A
- **COUPLING Switch:** AC or DC
- **OFFSET,**
  - **Switch:** None or Variable
  - **Variable Control Knob:** ±20V (configurable for ±45V)
- **RAIL V Switch (voltage potential):** 180V or 90V
- **GAIN,**
  - **Switch:** 20X fixed or variable
  - **Variable Control Knob:** 0-20X
- **LED Displays indicate:** Power, Signal, Overload, Fault
- **Signal Input:** Unbalanced BNC or balanced Barrier Strip
- **Signal Output:** One pair of 5-Way Binding Posts, accepts wire up to 12 AWG

**Back Panel**
- **Power Connection:** 25 Amp IEC (with retention latch)
- **DB-9 Connector for:** Balanced signal input, remote emergency stop, fault monitor, current monitor

### Communication Capabilities (via back-panel DB-9 Control Port)

**Current Monitor:** 5A/V ±1%

**Reporting:** System Fault

**Remote Control:** Emergency Stop

### Physical Characteristics

**Chassis:**
The Amplifier is designed for stand- alone or rack-mounted operation. The chassis is steel with a black powder coat finish. The unit occupies one-half rack of two EIA RU.

**Weight:** 20 lbs (9.1 kg), Shipping 26 lbs (11.8 kg)

**AC Power:**
Single phase, 120 VAC, 60 Hz, 15A service;
(220-240 VAC, 50-60 Hz, 8A service model 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:**
Two-speed forced air cooling from front to back

**Dimensions:** 9.5 in. x 22.75 in. x 3.5 in.
(24.1 cm x 57.8 cm x 8.9 cm)

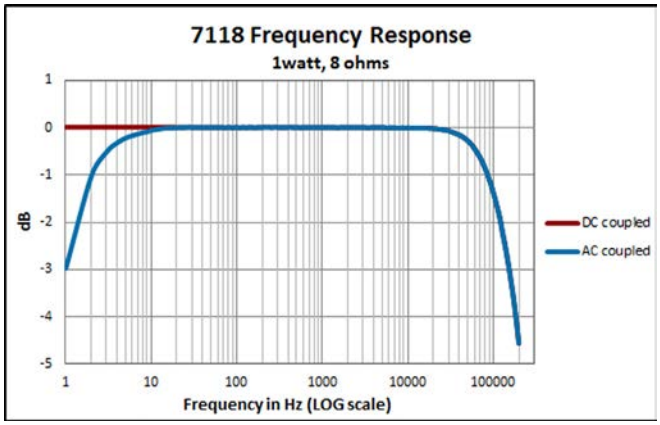
### Protection

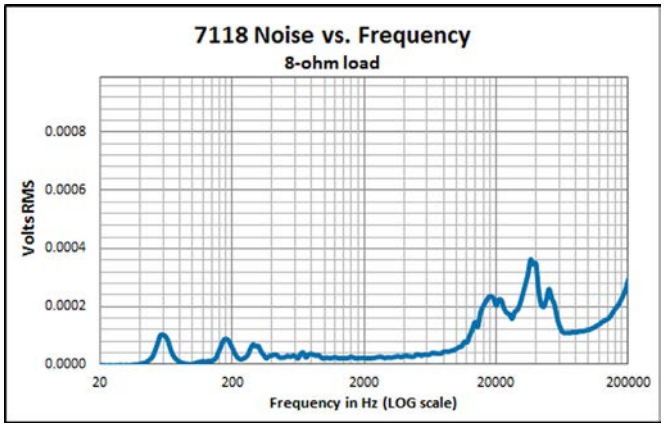
**Over/Under Voltage:**
± 10% from specified supply voltage amplifier is forced to Standby

**Over Current:**
Fuse protection on both main power and low voltage supplies

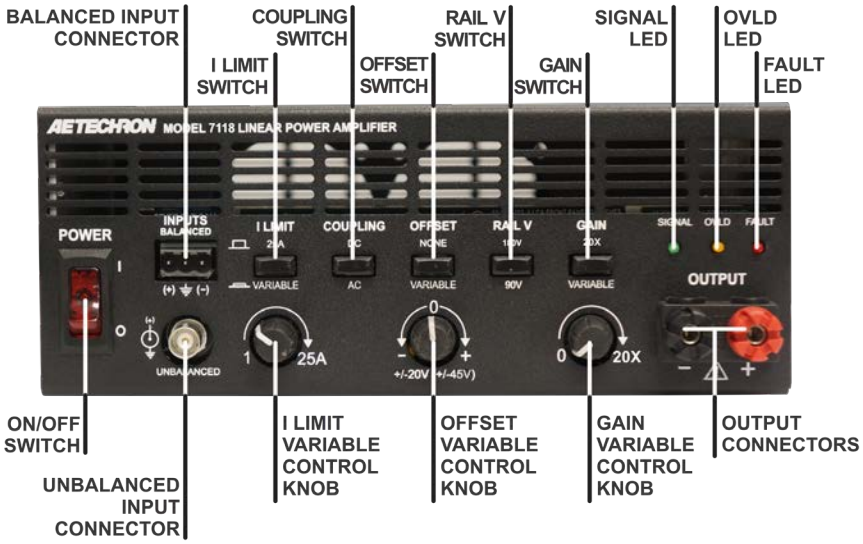
**Over Temperature:**
Separate output transistor, heat sink, and transformer temperature monitoring and protection

## Frequency Performance




## Front Panel Controls, Connectors and Indicators




## Back Panel Connectors


CE 220-240V versions of this product bear the CE mark

*AE Techron Sales Representative*