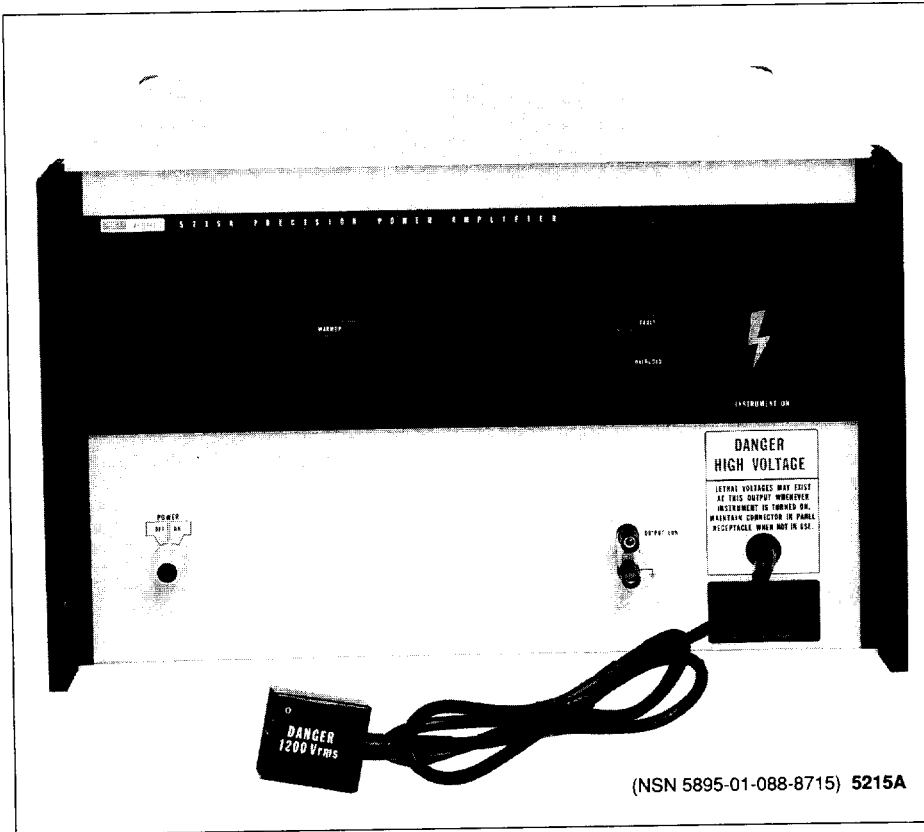


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### 5215A Precision Power Amplifier

Designed for use with 5700A, 5200A, or 5100B Calibrators

Output voltages to 1100V rms

Maximum output power 220 watts

10 Hz to 100 kHz, typical upper limit 120 kHz

420 ppm midband amplitude uncertainty at 1000V rms

200 ppm midband six-month stability

Fully programmable

Short and overload protected

The 5215A Precision Power Amplifier is an ac coupled programmable inverting amplifier with a fixed gain of 100. Output level is specified to 1100V at up to 200 mA, with a typical upper limit of 1200V before automatically tripping into standby mode.

The 5215A includes automatic-overload sensing and recovery. Upon sensing an excessive slew rate or frequency of the input signal, or a momentary output overload, output is returned

to zero within 2 microseconds and held there for 6 milliseconds or until the fault is corrected. When a steady overload, shorted output, or excessive input drive level is detected, the 5215A trips and locks into standby mode and displays a fault indicator.

An interface for a 5200A Alternating Voltage Calibrator is standard, allowing the 5215A to be controlled by the calibrator as an extension of its capabilities.

The 5215A includes a 1-meter output cable with a protective shrouded connector. Remote sensing is brought to this connection point for maximum accuracy. An insulated receptacle is provided on the front panel for safe storage of the output connector when not in use. Option 5215-07, for system applications, moves this cable to the rear panel.

All calibration adjustments and lamp replacements can be performed without exposure to high voltage. The output amplifier and all of the printed circuit modules are easily removed for repair or exchange.

### Calibration and Characterization

The 5215A is calibrated at the Fluke manufacturing facility by instrumentation traceable to the U.S. National Institute of Standards and Technology. When ordered with a 5200A AC Calibrator, 5200A-900 characterization may be ordered including simultaneous characterization of the 5215A at points compatible with 5200A-800 software. See the 5200A Alternating Voltage Calibrator for more information.

## Specifications

### Technical Specifications

#### Amplitude Uncertainty with 5200A Calibrator

Basic Instrument Absolute Uncertainty*		Characterized Uncertainty**		
Freq Hz	±(ppm setting + ppm range)	Freq Hz	±(ppm setting + ppm range)	
			Relative	Absolute
10-30	1200+50	50-100	190+20	210+20
30-20k	400+20	100-10k	180+20	200+20
20k-50k	800+50	10k-20k	200+20	220+20
50k-100k	1000+100	20k-50k	310+30	630+30

\* Includes transfer standards, dc reference source, and allowances for techniques. 90 days, 18°C to 28°C, after 1-hour warm-up

\*\* 180 days, 18°C to 28°C, after 1-hour warm-up. Requires 5200A-900

#### Characterized-Point Absolute Uncertainty:\* ±ppm

Frequency, Hz				
50	100	200	1k	2k
180	180	180	180	180
			20k	50k
			200	610

\* Includes transfer standards, dc reference source, and allowances for techniques. 180 days, 18°C to 28°C, after 1-hour warm-up. Requires 5200A-900

**Output Voltage Range:** 100V to 1099.999V rms  
**Output Voltage Resolution:** 1 mV with 5200A; 10 mV with 5100 Series, ac output only  
**Temperature Coefficient:** For 0°C to 18°C and 28°C to 50°C, add ±(0.025 x uncertainty) per °C below 18°C or above 28°C

5215A

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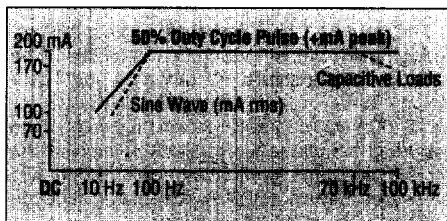
**Stability\***

Frequency Hz	10 Minutes	24 Hours	6 Months
	±(ppm setting + ppm range)		
10-100	0 + 50	100 + 0	200 + 0
100-20k	70 + 5	100 + 0	200 + 0
20k-100k	70 + 5	200 + 0	400 + 0

\*Constant line, load, and temperature, total peak to peak random change in rms value

**Maximum Isolation Voltage:** Output common may be floated up to ±10V dc or rms ac from chassis to reduce common mode errors

**Maximum Load Current:**



**Maximum Capacitive Load:** 1500 pF, not to exceed rated load current. (Example: maximum capacitive load at 1000V, 100 kHz is 270 pF)

**DC Offset Voltage:** ±10 mV at the output\*  
\*90 days, 18°C to 28°C, after 1-hour warm-up

**Total Harmonic Distortion:**\* Resistive loads greater than 1500Ω or capacitive loads less than 1000 pF

10 Hz to 20 kHz	0.05% of setting
20 kHz to 50 kHz	0.07% of setting
50 kHz to 100 kHz	0.1% of setting

Resistive loads less than 1500Ω or capacitive loads greater than 1000 pF

10 Hz to 10 kHz	0.05% of setting
10 kHz to 20 kHz	0.1% of setting
20 kHz to 50 kHz	0.17% of setting
50 kHz to 100 kHz	0.25% of setting

\*Bandwidth 10 Hz to 1 MHz

**Overload Protection:** Limit protection against input noise spikes, momentary output over loads, excessive input slew rate, and excessive input frequency. Trip protection against input over-drive, steady overloads, and short circuit.

**Random Noise:** Less than 50 mV rms

**Line Regulation:** ±10 ppm of setting for 10% change in line voltage

**General Specifications**

**Input Power:** 100V, 115V, 200V, 230V ac, ±10%, internal jumper selected, 50 Hz to 60 Hz, 1800 VA at full load. Receptacle on rear panel for calibrator power

**Size:** 26.7 cm H x 43.2 cm W x 62.7 cm D (10.5 in H x 17 in W x 24.7 in D)

**Weight:** 54.5 kg (120 lb)

**Included with Instrument:** Instruction manual, interface cable to 5200A, power cords, serialized and dated calibration certificate

**Ordering Information**

**Models** January 1990 prices

**5215A** Precision Power Amplifier ..... \$10,450  
**5215A-07** With Rear Output ..... 10,470

**Accessories** (Also see Section 17)

**Y5000** Interface Buffer for 5100 Series \$ 600  
**Y5001** Interface Cable for 5100 Series 275  
**Y5701** Cable, 5700A to 5205A or 5215A 250  
**M10-205-600** 10 1/2" Rackmount Kit.... 110  
**M00-280-610** 24" Rack Slide Kit ..... 130

**Customer Support Services**

**Warranty**

One-year product warranty. See Section 16 for further information on warranty terms and conditions.

**Extended Warranty**

A 10% discount is available when you order the following at the time of the instrument purchase or when ordered within the factory warranty period.

**SC1-5215A** Repair ..... \$ 772  
**SC2-5215A** Calibration ..... 462  
**SC3-5215A** Full Service ..... 1148  
**SC4-5215A** Performance Verification-Plus 277

*Note: Incoming and/or outgoing calibration readings are available as an option.*