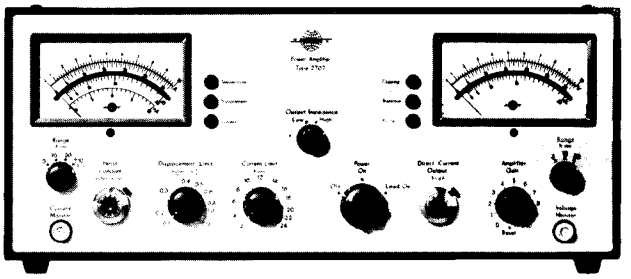
product data

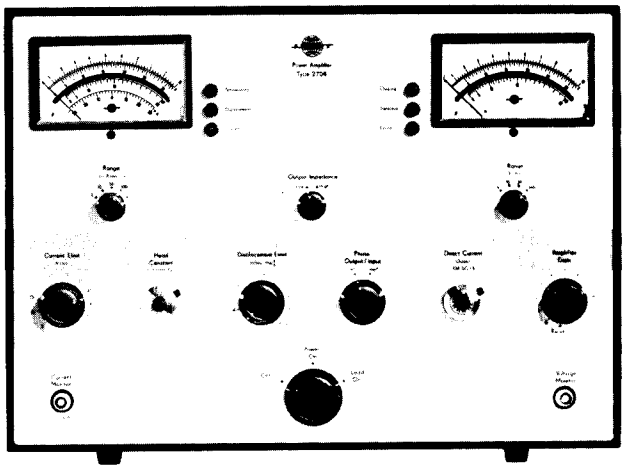
types 2707 and 2708

power amplifiers

FEATURES:
- Direct coupled solid state
- Front panel control for Low or High output impedance
- Front panel control for DC centering of exciter table
- High AC power output and large DC capability in a small cabinet
- Multi-range precise current and voltage monitoring meters
- Low distortion over wide frequency range
- Adjustable exciter displacement limit
- Adjustable RMS (including DC) output current limit
- Internally protected against current overload
- Extensive built-in protection with six indicator lights
- External protection possible
- Automatic shut-down for malfunction in single and multiple systems
- Switchable phase reversal of output signal for mode studies
- Front panel oscilloscope monitor points



2707 220 VA



2708 1200 VA

Power Amplifiers Types 2707 and 2708

The Power Amplifiers Types 2707 and 2708 have been designed to drive small vibration exciters, particularly the B & K Exciter Systems V and S with interchangeable heads. The V system is made up of the Exciter Body Type 4801 and the Exciter Heads Types 4811, 4812, 4813, 4814 and 4815, while the S system consists of Types 4802, 4816, 4817, 4818 and 4819.

The Power Amplifiers have a useable frequency range from DC to 100 kHz. The full AC output is 220 VA over the range 40 Hz to 10 kHz for Type 2707, and 1200 VA over the range 5 Hz to 5 kHz for Type 2708. Harmonic distortion content of the output is small as heavy negative feedback is used.

USES:
- Single and multiple exciter applications:

  Power Amplifier Type 2707 drives Exciter System V to full rating.
  Can also drive Exciter System S.

  Power Amplifier Type 2708 drives Exciter System S to full rating.
  Can also drive Exciter Systems V and M.

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The signal source used is a Sweep Random Generator Type 1042 driving into Power Amplifiers Type 2707. Each Power Amplifier drives an Exciter Head/Body combination. Either the Mode Study Head Type 4814, the Big Table Head Type 4813, or the General Purpose Head Type 4812 can be used.

Before the Control Signal Selector, each feedback signal is normalized and amplified in one channel of an Accelerometer Preamplifier Type 2622 and a Vibration Meter Type 2502. The 1042 controls the meter time constant, the stabilizing relay and the cross-over frequency. If more than the single cross-over frequency available here is required, the Vibration Programmer Type 4411 could be added to give up to 5 cross-overs.

Two signal generators, each with separately controlled compressors, could be used if the generators were connected in the "Master-Slave" mode (ref. Application of B & K Equipment to Mechanical Vibration and Shock Measurements, section on Vibration Testing).

Specifications 2707 and 2708

Power Amplifier	**Type 2707**		**Type 2708**	
Capacity	220 VA into 0.5Ω exciter or resistor load		1200 VA into 0.6Ω exciter or resistor load	
Voltage	10 V RMS DC to 10 kHz		27 V RMS DC to 5 kHz 13.5 V RMS at 10 kHz	
Current	10 A DC 11 A RMS at and below 5 Hz 22 A RMS 40 Hz to 10 kHz		20 A DC 25 A RMS at 0.1 Hz 45 A RMS 5 Hz to 10 kHz	
Frequency Range				
Full capacity	40 Hz to 10 kHz		5 Hz to 5 kHz	
Reduced capacity	DC to 100 kHz		DC to 100 kHz	
Frequency Response	Typical small signal response, low impedance mode			
DC input	DC to 10 kHz ± 0.5 dB DC to 100 kHz ± 3 dB		DC to 10 kHz ± 0.5 dB DC to 100 kHz ± 3 dB	
AC input	15 Hz to 100 kHz ± 3 dB		15 Hz to 100 kHz ± 3 dB	
Input Impedance	at least 10 kΩ		at least 10 kΩ	
Gain at 1 kHz	Low Impedance	High Impedance	Low Impedance	High Impedance
	5 V/V ± 2 dB	14 A/V ± 2 dB	8.3 V/V ± 2 dB	14 A/V ± 2 dB
Output Impedance	< 0.02Ω DC to 1 kHz < 0.05Ω 1 kHz to 10 kHz	> 20Ω 5 Hz to 1 kHz > 50Ω 20 Hz to 300 Hz > 80Ω 40 Hz to 100 Hz	< 0.01Ω DC to 1 kHz < 0.05Ω 1 kHz to 10 kHz	> 10Ω 2.5 Hz to 1.5 kHz > 20Ω 5 Hz to 700 Hz > 70Ω 20 Hz to 200 Hz
Harmonic Distortion	0.5Ω resistive load		0.6Ω resistive load	
Full capacity	< 0.1% DC to 5 kHz < 0.5% 5 kHz to 10 kHz	< 0.2% DC to 2 kHz < 0.7% 2 kHz to 10 kHz	< 0.2% DC to 5 kHz < 0.4% 5 kHz to 10 kHz	< 0.3% DC to 2 kHz < 0.7% 2 kHz to 5 kHz
Noise and Hum				
below full output	at least 85 dB	at least 75 dB	at least 80 dB	at least 70 dB
DC Stability	For + 5% to − 15% variation of mains supply from nominal, and for 10 to 40°C (50 to 104°F) variation in ambient temperature			
	Less than 50 mV drift		Less than 100 mV drift	
Direct Current Output	Available at output socket, variable by front panel control			
	at least ± 2 V		at least ± 5 V	

Specifications 2707 and 2708 continued

Power Amplifier	Type 2707		Type 2708	
Metering	Quasi-RMS indication rectifier circuits correct for sinusoidal and Gaussian inputs			
	Voltmeter	Ammeter	Voltmeter	Ammeter
Scales	3, 10, 30 V RMS	3, 10, 30 A RMS ± 10 A DC	3, 10, 30, 100 V RMS	3, 10, 30, 100 A RMS ± 30 A DC
Response	± 2% 20 Hz to 10 kHz	± 2% 20 Hz to 5 kHz ± 5% 5 kHz to 10 kHz	± 2% 20 Hz to 10 kHz	± 2% 20 Hz to 5 kHz ± 5% 5 kHz to 10 kHz
Accuracy at 1 kHz	± 2% of full scale	± 4% of full scale	± 2% of full scale	± 4% of full scale
Protection	Input signal is removed and an indicator lamp is lit when the following parameters exceed preset limits: Exciter Displacement — limit adjustable Driver Coil Current — true RMS (including DC) adjustable limit Power Transistor Junction Temperature Heat Sink Temperature Exciter fuse failure, loss of field or cooling motor voltage, attempted operation of Exciter Head separate from Exciter Body Power transistor fuse blown, phase failure on three phase line (only Type 2708)			
	Front panel indication is provided when the following occurs (no shut-down): Output signal clipping Power transistor fuse blown (only Type 2707)			
Other Features	Electronic peak current limiting Selectable output phase, 0° or 180° Voltage and Current Monitor points (front panel) Safety Interlocks remove signal upon mis-operation of controls Multiple Exciter-Amplifier operation. Cross interlocking between Amplifiers Exciter power switching, system control			
Temperature Range	5 to 40°C (41 to 104°F)			
AC Power Requirements 50 to 60 Hz	Single phase 100, 120, 127, 200, 220, 227, 240, 247, 254 V RMS, ± 5% 700 VA at full output		Single phase 100, 120, 127, 200, 220, 227, 240, 247, 254 V RMS, + 5%, − 15%, 50 VA. Additional three phase 200, 208, 220, 230, 240, 340, 360, 380, 400, 420, 440, 460, 480 V RMS, ± 5%, 2.4 kVA at full output	
	Almost full output voltage capability down to − 15% of nominal mains supply. Exciter Body power is additional.			
Cabinet	Supplied as model A (light-weight metal cabinet) or C (as A but with flanges for standard 19" racks).			
Dimensions (A-model excluding connectors) Height Width Depth	 17.7 cm (7.0 in) 43.0 cm (16.9 in) 50.0 cm (19.7 in)		 31.1 cm (12.3 in) 43.0 cm (16.9 in) 50.0 cm (19.7 in)	
Weight (A-model)	27.9 kg (61.4 lb)		59 kg (130 lb)	
Accessories Included	1 screened BNC 75Ω plug (JP 0035) 1 3-pin plug (JP 0308) 1 6-pin plug (JP 1005) Various lamps and fuses		1 screened BNC 75Ω plug (JP 0035) Various lamps and fuses	

B&K INSTRUMENTS, INC.
Brüel & Kjaer Precision Instruments
5111 West 164th Street • Cleveland, Ohio 44142. Telephone: (216) 267-4800 • TWX: (810) 421-8266
121 West Manchester Blvd. • Inglewood, California 90301. Telephone: (213) 678-2674 • TWX: (910) 328-6524

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