

PRODUCT DATA

Power Amplifier Type 2721

Power Amplifier Type 2721 has been designed to drive Modal Exciters Types 4826, 4827 and 4828, but can be used with any vibration or modal exciters requiring a 1250 VA power amplifier.

USES

- To drive Modal Exciters Types 4826, 4827 and 4828 safely to full force rating
- To drive any modal or vibration exciter requiring a 1250 VA power amplifier

FEATURES

- 1250 VA power output
- Adjustable RMS output-current limit
- Low or high output impedance
- Low distortion over wide frequency range
- Extensive built-in protection, including interlock
- Rear panel voltage and current monitor points
- Front panel indicator lights (LED type) showing clipped output signal, temperature overload, current overload, output signal phase (0° or 180°), operating mode (current or voltage), current state and interlock input disabled
- Multifunction display (backlit LCD type) showing approximate output current and output voltage
- When used with Types 4827 and 4828, powers DC Static Centering Unit Type 1056 and Field Power Supply Type 2830



Description

Power Amplifier Type 2721 has been designed to drive Modal Exciters Types 4826, 4827 and 4828, but can be used with any 4 Ω vibration or modal exciter requiring a 1250 VA power amplifier. The power amplifier has a useable frequency range from 40 Hz to 10 kHz (full capacity) or DC to 50 kHz (reduced capacity). The rated AC output is 1250 VA into a 4 Ω exciter or resistive load, in the frequency range DC to 15 kHz (± 0.5 dB). Harmonic content of the output is very small as heavy negative feedback is used. The instrument can tolerate temperature and supply line variations while maintaining excellent stability. Type 2721 can be used as a voltage generator with low output impedance and a flat voltage frequency response, or as a current generator with high output impedance and a flat current frequency response. The RMS output-current limit is adjustable. For proper functioning, Modal Exciters Types 4827 and 4828 require Power Amplifier Type 2721 together with Field Power Supply Type 2830 and DC Static Centering Unit Type 1056. The picture above shows Type 2721 front and back.

Protection

Power Amplifier Type 2721 features extensive protection circuits for itself and the connected vibration exciter. When triggered, the protection circuits disconnect the input signal and a LED lights up, indicating the reason for the instrument shutdown. Overload protection against excessive coil current is provided by setting the RMS output current to between 1 A and 18 A. This feature enables Type 2721 to safely drive modal and vibration exciters, with different maximum current ratings. The signal to the exciter is switched off if the preset current limit is exceeded, and the red current LED lights up. The power output stage is protected by a temperature-sensing safety device to prevent output transistor temperatures that exceed design limits and lead to transistor failure. The temperature-protection circuit blocks the amplifier input signal, lighting up the red temperature LED. Further protection is provided by an interlock relay that disconnects the input if the operator switches between voltage mode and current mode during operation of Type 2721. Resetting after current, temperature and interlock shutdown is made by simply turning the amplifier gain control fully anticlockwise.

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Specifications – Power Amplifier Type 2721

POWER OUTPUT CAPACITY: 1250 VA into a 4 Ω exciter or resistive load, at 25°C and nominal mains voltage (8-pin Neutrik SPEAKON socket at rear panel)

OUTPUT VOLTAGE CAPACITY: 71 V RMS, DC to 15 kHz (without load)

OUTPUT CURRENT CAPACITY
7 A RMS at or below 5 Hz
17.75 A RMS, 40 Hz to 10 kHz
15 A RMS, at 15 kHz

FREQUENCY RANGE
Full Capacity: 40 Hz to 10 kHz
Reduced Capacity: DC to 50 kHz (–20 dB)

FREQUENCY RESPONSE
Typical small signal response (–20 dB) in low impedance mode:
DC Input: DC to 15 kHz ±0.5 dB; DC to 50 kHz ±3 dB
AC Input: 15 Hz to 15 kHz ±0.5 dB
(2 separate BNC sockets at rear panel)

INPUT IMPEDANCE: >10 kΩ

INPUT CAPACITY: < 47 pF

THD AT FULL OUTPUT CAPACITY
<0.2%, 40 Hz to 5 kHz, Low Impedance Mode
<0.3%, 5 kHz to 10 kHz, Low Impedance Mode
<0.3%, 40 Hz to 2 kHz, High Impedance Mode
<0.8%, 2 kHz to 10 kHz, High Impedance Mode

DC STABILITY: Less than ±0.1 V drift from 0 V for ±10% variation of mains supply from nominal, and for 10°C to 40°C (50°F to 104°F) variation in ambient temperature

CONTROLS
Power On/Off
Continuously variable gain control, 0 to Cal. with integral reset
Continuously variable current limit control 1 to 18 A (RMS)
Switch for voltage mode or current mode operation
Switch for phase inversion (0° or 180°) between input and output

GAIN at 1 kHz
Low Impedance Mode: 28.7 V/V ±2 dB
High Impedance Mode: 18.7 A/V ±2 dB

MONITOR OUTPUT (5 Hz TO 15 kHz)
Voltage: 0.1 V/V ±3%
Current: 0.1 V/A ±3%

NOISE AND HUM (below full output)
Low Impedance: at least 95 dB
High Impedance: at least 85 dB

MULTIFUNCTION DISPLAY (LCD) and INDICATOR LAMPS
Clipping
Temperature overload
Current overload
State
Voltage mode
Current mode
Interlock
Phase 0°
Phase 180°
Voltage, RMS, readout accuracy ±5% +/5 digit (40 Hz to 10 kHz)
Current, RMS, readout accuracy ±5% +/1 digit (40 Hz to 10 kHz)
Air Control, Overdrive Control, Switch Mode

PROTECTION

Input signal is removed and an indicator lamp is lit when the following parameters exceed preset limits:

- Driver Coil Current – true RMS adjustable limit 1 to 18 A (RMS)
- Control input for reduced capacity
- Shutdown Control Output
- Reset Control Output
- Power Transistor Temperature
- Heat Sink Temperature
- Output Signal Distortion – no shut-down

OTHER FEATURES: Electronic peak current limiting

POWER REQUIREMENTS

Single phase 100, 120, 230 V AC, ±10%, 50 – 60 Hz, factory preset
Approx. 1900 VA at full load

POWER OUTPUT

Field Power Supply Type 2830
DC Static Centering Unit Type 1056

FUSES

Fuse cartridge at rear
100 V or 120 V: T20.00 A slow blow
230 V: T10 A slow blow

DIMENSIONS

Height: 4HE equivalent of 176 mm
Width: 482.6 mm (19 in) with flanges for standard 19-inch rack mounting
Depth: 610 mm

WEIGHT: 40 kg (88.2 lb.)



Compliance with EMC Directive



Compliance with the EMC requirements of Australia and New Zealand

Safety, EMC Emission and Immunity: According to relevant standards:
EN 61010–1, IEC 61010–1, UL 3111–1, EN 50081–1/2, IEC 61000–6–1/2/3/4, EN 61326–1, CISPR22 Class B limits, FCC Rules Part 15, EN 50082–1/2, EN 61326–1
Temperature: According to IEC 60068–2–1 & IEC 60068–2–2
Operating temperature: +5 to +40°C (41 to 104°F)
Storage temperature: –25 to +70°C (–13 to 158°F)
Humidity: According to IEC 60068–2–3, Damp Heat: 90% RH (non-condensing at 40°C (104°F))
Mechanical: Non-operating according to IEC 60068–2–6, IEC 60068–2–27, IEC 60068–2–29

Ordering Information

TYPE 2721 POWER AMPLIFIER

Includes the following accessories:
Mains Cable
Fuse

OPTIONAL ACCESSORIES

AQ 0659	Cable with two 8-pin Neutrik SPEAKON plugs, 5 m long (connection to Modal Exciter Type 4826 – standard accessory with Modal Exciter Type 4826)
AQ 0650	Cable with two 8-pin Neutrik SPEAKON plugs, 1 m long, (one of two connections from Field Power Supply Type 2830 to Power Amplifier Type 2721 – provided as standard accessory with Field Power Supply Type 2830)
AQ 0651	One 9-pin Sub-D serial flat cable with two female plugs and one 9-pin Sub-D serial flat cable with two male plugs (provided with DC Static Centering Unit Type 1056 as standard accessory)
AO 0133	Coaxial cable with BNC plugs at each end, 0.6 m long (one of two connections between DC Static Centering Unit Type 1056 and Power Amplifier Type 2721)

Brüel & Kjær reserves the right to change specifications and accessories without notice