

PRODUCT DATA

Power Amplifier — Type 2720

Power Amplifier Type 2720 has been especially designed to drive Modal Exciter Type 4825 but can be used with any vibration or modal exciter requiring a 500 VA power amplifier.

USES

- To drive Modal Exciter Type 4825
- To drive any modal or vibration exciter requiring a 500 VA power amplifier



FEATURES

- 500 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 LEDs 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) showing approximate output current and output voltage
- Powers DC Static Centering Unit Type 1056 (optional) if used with Type 2720

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Description

Power Amplifier Type 2720 has a useable frequency range from 40 Hz to 15 kHz (full capacity) or DC to 150 kHz (reduced capacity). The rated AC output is 500 VA into a 4 Ω exciter or resistive load, in the frequency range DC to 15 kHz (± 0.5 dB). The maximum voltage gain is 25 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 2720 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. The instrument consists of an input stage, a preamplifier, a power amplifier and various warning and safety circuits with indication lamps. A multifunction display shows output current and output voltage.

Protection

Type 2720 features extensive protection circuits for itself and the connected vibration exciter. When triggered, the protection circuits disconnect the input signal and an 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 and 11 A. This enables Type 2720 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 will light 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 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. Resetting after current, temperature and interlock shutdown is done by simply turning the amplifier gain control fully anticlockwise.

2720

Specifications – Power Amplifier Type 2720

COMPLIANCE WITH STANDARDS



compliance with EMC Directive
compliance with 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

POWER OUTPUT CAPACITY

500 VA into a 4 Ω exciter or resistive load, at 25°C and nominal mains voltage. 144 VA into a 1 Ω exciter or resistive load, at 40°C or at 10% above nominal mains voltage (4-pin Neutrik SPEAKON socket at rear panel)

OUTPUT VOLTAGE CAPACITY

45 V RMS, DC to 15 kHz

OUTPUT CURRENT CAPACITY

5 A RMS at or below 5 Hz
11 A RMS, 40 Hz to 15 kHz

MAX. VOLTAGE GAIN

25 dB (±2 dB) @ 1 kHz

FREQUENCY RANGE

Full capacity: 40 Hz to 15 kHz

Reduced capacity: DC to 150 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 150 kHz ±3 dB

AC Input: 15 Hz to 15 kHz ±0.5 dB

(2 separate BNC sockets at rear panel)

THD AT FULL OUTPUT CAPACITY

<0.1% (40 Hz to 5 kHz) Low Impedance Mode

<0.2% (5 kHz to 15 kHz) Low Impedance Mode

<0.2% (40 Hz to 2 kHz) High Impedance Mode

<0.8% (2 kHz to 15 kHz) High Impedance Mode

INPUT IMPEDANCE

>10 kΩ

DC STABILITY

Less than ±100 mV drift from 0 V for ±10% variation of mains supply from nominal, and for 10° to 40°C (50° to 104°F) variation in ambient temperature

CONTROLS

Power on/off

Continuously variable gain control, 0 to Cal. (25 dB) with integral reset

Continuously variable current limit control 1 to 11 A (RMS)

Switch for voltage mode or current mode operation

Switch for phase inversion (0° or 180°) between input and output

INDICATOR LAMPS (LED)

Clipping

Temperature overload

Current overload

State

Voltage mode

Current mode

Interlock

Phase (0° or 180°)

MULTIFUNCTION DISPLAY (LCD)

Voltage, RMS, read-out accuracy ±5% ±2 digit, 40 Hz to 15 kHz

Current, RMS, read-out accuracy ±5% ±2 digit, 40 Hz to 15 kHz

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 11 A (RMS)

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 RMS, ±10%, 50 – 60 Hz. Approx.

1000 VA at full load

Power insert connector with fuse cartridge and voltage selector at rear

FUSES

100 V or 120 V: T16.00A slow blow

230 V: T6.30A slow blow

DIMENSIONS

Height: 2 HE equivalent of 88 mm (3.5 in.)

Width: 482.6 mm (19 in.) with flanges for standard 19-inch rack mounting

Depth: 450 mm (13.8 in.)

WEIGHT

21 kg (46 lb.)

MONITOR OUTPUT

Voltage: 0.1 V/V ±3%, 5 Hz to 15 kHz

Current: 0.1 V/A ±3%, 5 Hz to 15 kHz

Ordering Information

TYPE 2720 POWER AMPLIFIER

includes the following accessories:

Mains Cable

Fuse

OPTIONAL ACCESSORIES

AQ 0649

Cable with 4-pin Neutrik SPEAKON plug, 5 metres

AQ 0648

Extension cable with Neutrik SPEAKON 4-pin connector at both ends, 10 metres

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