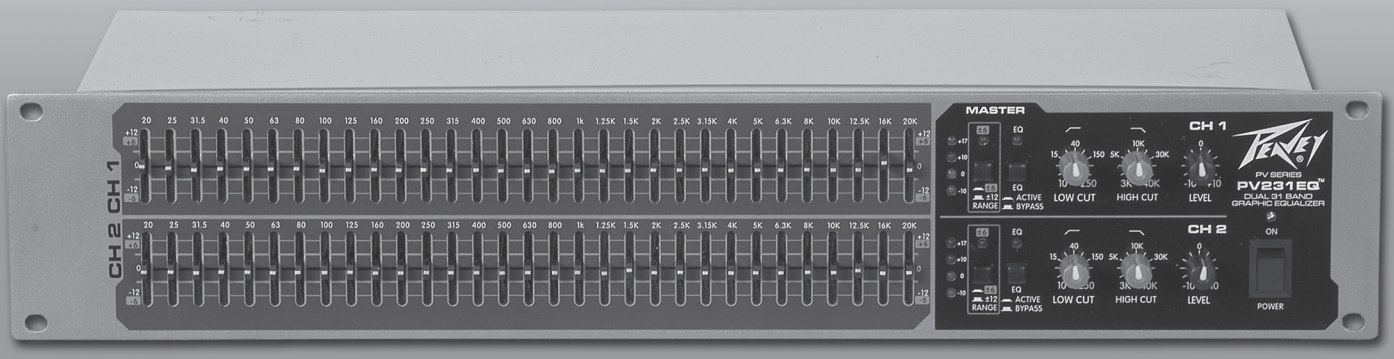
# PV®231EQ Graphic Equalizer



# IMPORTANT SAFETY INSTRUCTIONS

**WARNING:** When using electrical products, basic cautions should always be followed, including the following:

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any of the ventilation openings. Install in accordance with manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding plug. The wide blade or third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point they exit from the apparatus.
11. Only use attachments/accessories provided by the manufacturer.
12.  Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Never break off the ground pin. Write for our free booklet "Shock Hazard and Grounding." Connect only to a power supply of the type marked on the unit adjacent to the power supply cord.
16. If this product is to be mounted in an equipment rack, rear support should be provided.
17. Note for UK only: If the colors of the wires in the mains lead of this unit do not correspond with the terminals in your plug, proceed as follows: a) The wire that is colored green and yellow must be connected to the terminal that is marked by the letter E, the earth symbol, colored green or colored green and yellow. b) The wire that is colored blue must be connected to the terminal that is marked with the letter N or the color black. c) The wire that is colored brown must be connected to the terminal that is marked with the letter L or the color red.
18. This electrical apparatus should not be exposed to dripping or splashing and care should be taken not to place objects containing liquids, such as vases, upon the apparatus.
19. The on/off switch in this unit does not break both sides of the primary mains. Hazardous energy can be present inside the chassis when the on/off switch is in the off position. The mains plug or appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
20. Exposure to extremely high noise levels may cause a permanent hearing loss. Individuals vary considerably in susceptibility to noise-induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a sufficient time. The U.S. Government's Occupational Safety and Health Administration (OSHA) has specified the following permissible noise level exposures:

| Duration Per Day In Hours | Sound Level dBA, Slow Response |
|---|---|
| 8 | 90 |
| 6 | 92 |
| 4 | 95 |
| 3 | 97 |
| 2 | 100 |
| 1 1⁄2 | 102 |
| 1 | 105 |
| 1⁄2 | 110 |
| 1⁄4 or less | 115 |

According to OSHA, any exposure in excess of the above permissible limits could result in some hearing loss. Earplugs or protectors to the ear canals or over the ears must be worn when operating this amplification system in order to prevent a permanent hearing loss, if exposure is in excess of the limits as set forth above. To ensure against potentially dangerous exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of producing high sound pressure levels such as this amplification system be protected by hearing protectors while this unit is in operation.

# SAVE THESE INSTRUCTIONS!

ENGLISH

# PV®231EQ Graphic Equalizer

## Description

Thank you for purchasing a Peavey Electronics PV 231EQ graphic equalizer. The PV 231EQ is a dual-channel EQ incorporating Peavey's legendary low-noise, low-distortion design. Ruggedly constructed, the PV 231EQs have center-detented fader controls and offer selectable ±6 dB or ±12 dB gain and an LED display indicating level. Other features include variable-state low-cut and high-cut filters, XLR balanced inputs and outputs and bypass switches. PV 231EQ filters are set at ISO center frequencies within 3% accuracy. Whether on stage, in the studio or simply tweaking your home hi-fi system, the PV 231EQ is the EQ for you.

## Features

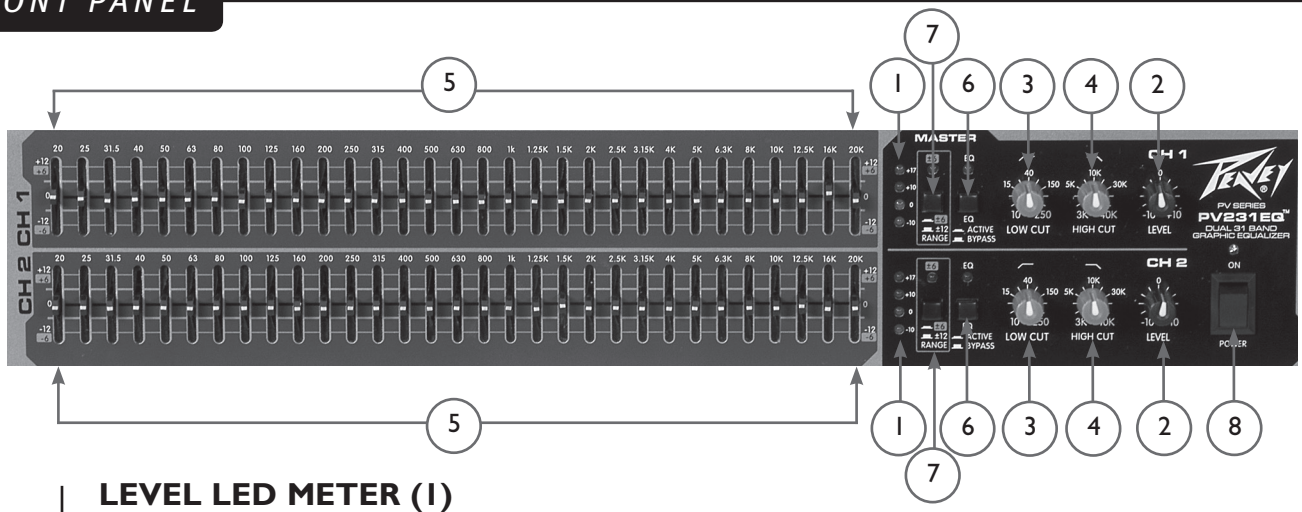
- **Dual channel (31 bands each channel)**
- **1/3 octave filter sets (ISO centers)**
- **20 Hz to 20 kHz effective equalization range**
- **Constant Q filters**
- **Selectable 6 dB or 12 dB cut or boost range**
- **Level LEDs (-10 to +17 dB)**
- **Variable state low and high cut filters**
- **XLR inputs and outputs for balanced operation**
- **Bypass switch with status LED**
- **10 dB boost /10 dB cut Level Control**
- **Ground lift switch**

## Equalization Process

Always begin the equalization process with all sliders at their center-detent (flat response) positions. Adjust the level up until the unit begins to feed back, then lower each fader until the feedback frequency is found. Lower the faders in small amounts to avoid adversely affecting sound quality. Likewise, excessive boosting of a frequency may result in feedback.

Exercise caution when attempting to boost frequencies below speaker system transducer cut-off. Typical sound reinforcement enclosures are not designed for 20 Hz performance, and transducer damage could result from over-boosting low frequencies. Excessive boost at very low frequencies could also limit overall system headroom. Engaging the low-cut filter is the best way to avoid these problems.

**NOTE:** Superb tonality, absence of feedback and great-sounding systems may not be achievable with any graphic equalizer. All other system components must be of high quality and designed for the application. No amount of equalization will correct an acoustically bad room or bad microphone/speaker arrangement, or completely correct the response curve of a poor loudspeaker.




## LEVEL LED METER (1)

This LED array indicates level from –10 dB to +17 dB.

## LEVEL CONTROL (2)

This calibrated, detented control regulates overall gain of the EQUALIZER SECTION (5). Unity gain throughout the signal chain can be maintained by recovering lost signal gain at this point. The equalization process may result in noticeable signal loss. To compensate for this loss, engage the BYPASS (6) switch and compare the signal level with that of the equalized level. Increase the GAIN control until the equalized level approximates that of the bypassed level. Let your ears be your guide.

## VARIABLE LOW-CUT FILTER (3)

This control adjusts the variable-state low-cut filter that rejects frequencies below the point selected. Frequency roll-off is 18 dB per octave. This filter will operate even with the BYPASS (6) switch engaged.

## VARIABLE HIGH-CUT FILTER (4)

This control adjusts the variable-state high-cut filter that rejects frequencies above the point selected. Frequency roll off is 18 dB per octave. This filter will operate even with the BYPASS (6) switch engaged.

## EQUALIZER SECTION (5)

These calibrated, detented controls adjust the amount of cut or boost at their respective frequencies. They are adjustable from -12 dB (cut) to +12 dB (boost) or -6 dB (cut) to 6 dB (boost) depending on the position of the Range switch.

## BYPASS (6)

This switch allows the signal to bypass all features except the LOW-CUT FILTER (4). When this switch is engaged, the signal is routed from INPUT (10 and 11) though the low-cut filter to the channel's output. Bypass is indicated by illumination of LED above the switch.

## RANGE (7)

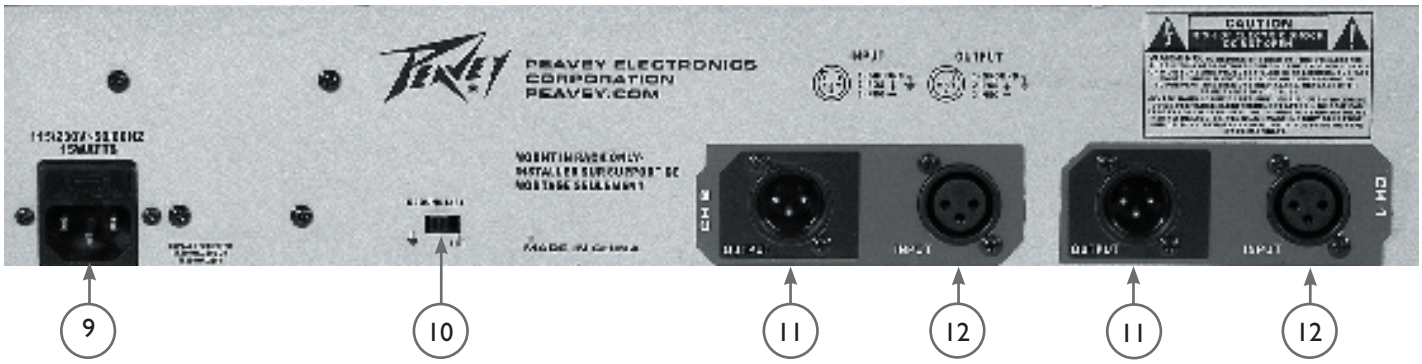
This switch allows the selection of range (+/-12 dB or +/-6 dB) of the Equalizer Section controls. This gives the operator the ability of finer control of the equalization.

## POWER (8)

This 2-position rocker switch applies mains power to the unit when in the ON position. The adjacent red LED indicates mains power activation.

**⚠ WARNING ⚠**

THE ON/OFF SWITCH IN THIS APPARATUS DOES NOT BREAK BOTH SIDES OF THE MAINS. HAZARDOUS ENERGY MAY BE PRESENT INSIDE THE ENCLOSURE WHEN THE POWER SWITCH IS IN THE OFF POSITION.




## IEC MAINS CONNECTOR (9)

This is a standard IEC power connector. An AC mains cord having the appropriate AC plug and ratings for the intended operating voltage is included in the carton.

Never break off the ground pin on any equipment. It is provided for your safety. If the outlet used does not have a ground pin, a suitable grounding adapter should be used and the third wire should be grounded properly. To prevent the risk of shock or fire hazard, always make sure that the equalizer and all associated equipment is properly grounded.

Incorporated into this IEC MAINS CONNECTOR is the MAINS FUSE HOLDER. If for any reason you are unable to power up this unit, remove the fuse by pulling out the holder. Check to see if the fuse is operational. If not, then replace with a fuse of the appropriate value and rating. If the fuse continues to fail contact your nearest Certified Peavey Service Center.

## GROUND LIFT SWITCH (10)

This will the lift circuit ground while keeping the Mains Safety Ground intact. This is useful when hum is present, and will maintain a safely operated unit.

## XLR OUTPUT (11)

These male 3-pin connectors provide balanced output when used with female XLR connectors.

## XLR INPUT (12)

These female 3-pin connectors provide balanced input when used with male XLR connectors.

# PV® 231EQ Graphic Equalizer
## SPECIFICATIONS

**Channels:** 2 (stereo)

**Bands:** 31 per channel

**Connectors:** XLR balanced inputs and outputs

**Frequency Centers:** 20 Hz, 25 Hz, 31.5 Hz, 40 Hz, 50 Hz, 63 Hz, 80 Hz, 100 Hz, 125 Hz, 160 Hz, 200 Hz, 250 Hz, 315 Hz, 400 Hz, 500 Hz, 630 Hz, 800 Hz, 1 kHz, 1.25 kHz, 1.5 kHz, 2 kHz, 2.5 kHz, 3.15 kHz, 4 kHz, 5 kHz, 6.3 kHz, 8 kHz, 10 kHz, 12.5 kHz, 16 kHz, 20 kHz

**Control Range:** Selectable +/-12 dB or +/-6 dB

**Input Impedance:** 50k ohms

**Output Impedance:** 600 ohms

**Maximum Output Level:** +21 dB

**Level Control:** +/- 10 dB

**Signal to Noise:** >93 dB unweighted

**Distortion:** 0.005%

**Roll-Off Filters:** 18 dB/octave, butterworth

**Low-Cut:** Variable state (10 Hz to 250 Hz)

**High-Cut:** Variable state (3 kHz to 40 kHz)

**Power Consumption:** 15 watts