



PZM™ -31S

A. Introduction/Features

The PZM-31S provides a deeper low-end frequency response in an attractive silver finish, as compared to its counterpart the PZM-30GP. Because of the special electret capsule used in the 31S, a warmer and smoother high-end sound results.

As with all PZMicrophones, the 31S operates on the basis of the Pressure Recording Process™ (see Instruction Manual, Section II). Contrary to conventional microphones, the 31S exhibits a hemispherical response, helping to reduce the number of microphones otherwise needed for wide pick-up situations. In addition, sound sources moving on the surface of a sphere surrounding the 31S, will cause no alteration in the quality of the sound.

Three power supply units are available for use with the 31S: The PA-18, PX-18 and the PX-T. The PA-18 and the PX-18 are small extruded chassis, differing mainly in that the PA-18 uses active circuitry to perform the required impedance conversion whereas the PX-18 uses a transformer. Both provide a choice of either phantom or battery powering.

The PX-T is a phantom only, tubular supply excellent for use in areas where space is limited for external supplies.

B. Unpacking

As soon as the microphone shipment is received, please inspect for any damage incurred in transit. Since the unit was carefully inspected and tested at the factory, it left unmarred. If damage is found, notify the transportation company immediately. Only the consignee may institute a claim with the carrier for damage during shipment. However, Crown will cooperate fully, in such an event. Be sure to save the shipping carton as evidence of damage for the shipper's inspection.

Even if the microphone arrived in perfect condition, as most do, it is advantageous to save the packing materials. They will prove valuable in preventing damage should there ever be occasion to transport or ship the microphone. Note the carton and internal pack - each is designed to protect the unit during transit. **DO NOT SHIP THE MICROPHONE OR POWER SUPPLY WITHOUT THIS FACTORY PACK!!**

Be sure to return the warranty registration yourself or through your dealer within 10 days of purchase to receive your Crown Care Card.

C. Accessories Supplied

The 31S comes complete with:

- 1) Instruction Manual plus Supplement
- 2) PA-18, PX-18 or PX-T impedance convertor/ power supply unit as specified
- 3) PZM windscreen
- 4) Two 9V batteries (with PA-18, PX-18 only)
- 5) 6 foot connecting cable

D. Placement

The PZM-31S is designed to operate near/on any non-absorbant boundary (or background). This means it will be necessary to choose a boundary that will provide optimum performance as well as provide adequate support. Typical boundaries are the floor, wall, ceiling, and table. This type of mounting expands the effective boundary layer available for the transmission of sound to the microphone and improves the frequency response.

Dimensions for the 31S are shown in Section J, if needed. Also note several of the placement examples located in Section VI of the Instruction Manual.

E. Connecting Power/Signal Lines

As mentioned before, the 31S requires an external power source in order for it to operate properly. The two switchable battery/phantom supplies, the PX-18 and the PA-18 (Fig. A) are the most commonly chosen for use with this model. The PX-18 is gray in color while the PA-18 is dark blue in color. Both versions are mounted in a small extruded aluminum and steel chassis. They may be placed 25 feet or less from the microphone with



Fig. A. PX-18, PX-T, PA-18 Supplies

standard 3-wire shielded microphone cable used between both. Fig. B shows the recommended hook-up configuration. Also, the PX-T (Fig. A) can be used in place of either the PX-18 or PA-18 if so desired. Its small tubular shape allows it to be connected directly to the male XLR connector of the 31S.

The PZMicrophone supplies differ electrically in that the PX-18 and the PX-T utilize a transformer to perform the impedance conversion whereas the PA-18 uses active circuit components. Because most mixing devices provide +48V phantom voltages from their input jacks, one of the three above mentioned supplies must be used to reduce the voltage to the PZMicrophone capsule's correct operating voltage. Conversion to phantom supply on the PA-18 and PX-18 is done by sliding the power switch to the "OFF/PHANTOM" position.

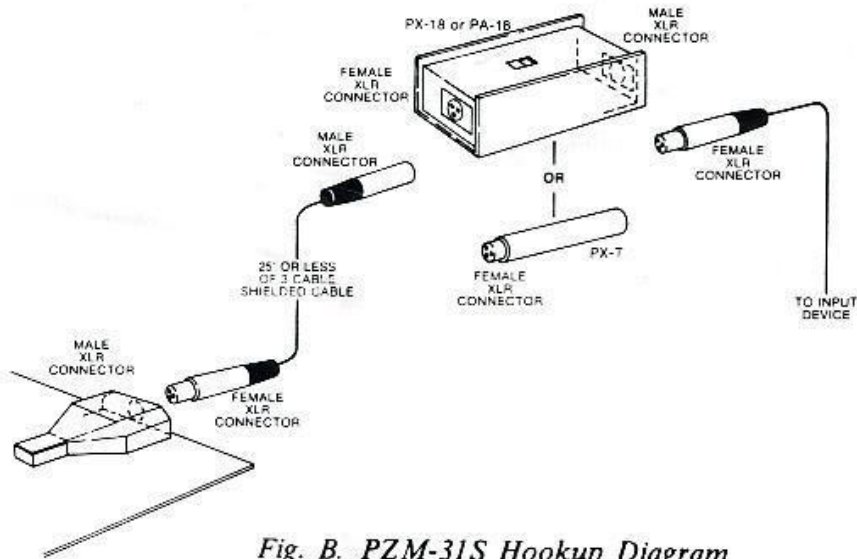


Fig. B. PZM-31S Hookup Diagram

Note: When using batteries as the power source, always move the power switch to "OFF/PHANTOM" upon completion of use in order to prolong battery life.

Regardless of which PZMicrophone supply is used, standard 3-wire shielded microphone cable with appropriate XLR type connectors should be used between the supplies and input jack of the mixer, tape recorder or other similar device. Because of the output from this point on is a balanced, low impedance line, an extended length of cable may be used without fear of high frequency loss or other sound degradation.

Warning: Never place a 31S directly into mixing consoles which provide phantom voltages without first connecting it to a PZM power supply. Excessive phantom voltages will result in poor performance and could possibly damage the electret capsule, resulting in warranty invalidation.

Should it become necessary to hook-up the output to a connector other than the standard XLR (pin, phone, etc.), perform the cable modifications shown in Fig. C.

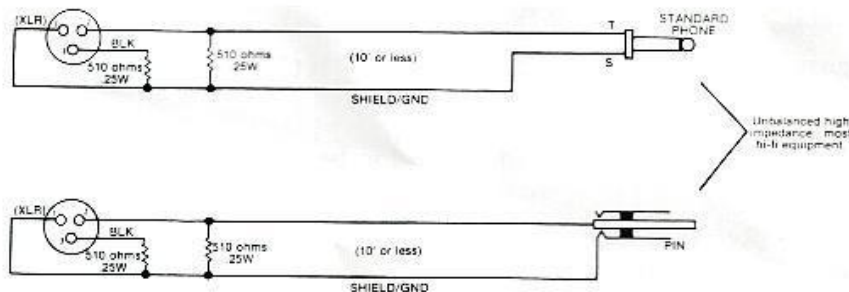


Fig. C. Alternate Connections

F. Specifications - PZM-31S

Frequency Response: 20Hz-20KHz (frequency response measured with the microphone on a four foot square boundary to allow useful comparison with other Crown PZM measurements. As with other Crown Pressure Zone Microphones, the response will vary when the microphone is moved from the boundary, or mounted on a boundary with different characteristics).

Polar Pattern: Hemispherical.

Electrical Impedance: With the PA-18, PX-18 and PX-T; 150 ohms balanced.

Normal Loading Impedance: 1000 ohms.

Signal to Noise: 3% at 150dB-SPL.

Sensitivity: Open circuit voltage SV -76dB, 0dB=1 volt/microbar; power level SP -53dBm, 0dBm=1 milliwatt/10microbars; EIA rating GM -148dB, 0dB=EIA standard SE-105 August, 1949.

Color: Silver with black trim.

Dimensions: 5" (12.7cm) by 6" (15.4cm) by .75" (1.9cm).

Cable Length: Cord from mike to supply is 6 feet.

G. Specifications - PA-18

Weight: 1.25 pounds (.567kg).

Dimensions: 5.0" L by 1.875" W by 1.750" H (12.7cm x 4.8cm x 4.4cm).

Color: Dark blue insert.

Construction: Aluminum and steel for best shielding and durability possible.

Switch: Recessed slide switch for change from phantom to battery (also serves as battery on/ off switch).

Battery: Two nine volt alkaline batteries required; Mallory #MN1604 or equivalent (carbon types can be used but with shorter life expectancy).

Battery Life: Greater than 200 hours of continuous service.

Circuit: High performance active circuit to produce signals with the least possible distortion.

Output: Balanced, normally terminated by 1000 ohms or greater.

Phantom Supply: 48 volts required for best performance but will operate adequately from 18 and 48 volts.

Connectors: XLR type female input; male output.

H. Specifications - PX-18

Weight: 1.25 pounds (.567kg).

Dimensions: 5.0" L by 1.875" W by 1.750" H (12.7cm x 4.8cm x 4.4cm).

Color: Steel gray insert.

Construction: Aluminum and steel for best shielding and durability possible.

Switch: Recessed slide switch for change from phantom to battery (also serves as battery on/ off switch).

Battery: Two nine volt alkaline batteries required; Mallory #MN1604 or equivalent (carbon types can be used but with shorter life expectancy).

Battery Life: Greater than 500 hours of continuous service.

Circuit: High performance transformer circuit for low distortion and lowest possible noise.

Output: Balanced, normally terminated by 1000 ohms or greater.

Phantom Supply: 48 volts required for best performance but will operate adequately from 18 and 48 volts.

Connectors: XLR type female input; male output.

I. Specifications - PX-T

Weight: 2 ounces (.0567kg).

Dimensions: 4" long by .750" diameter (10.16cm x 1.90cm).

Construction: Steel tube for best shielding and durability possible.

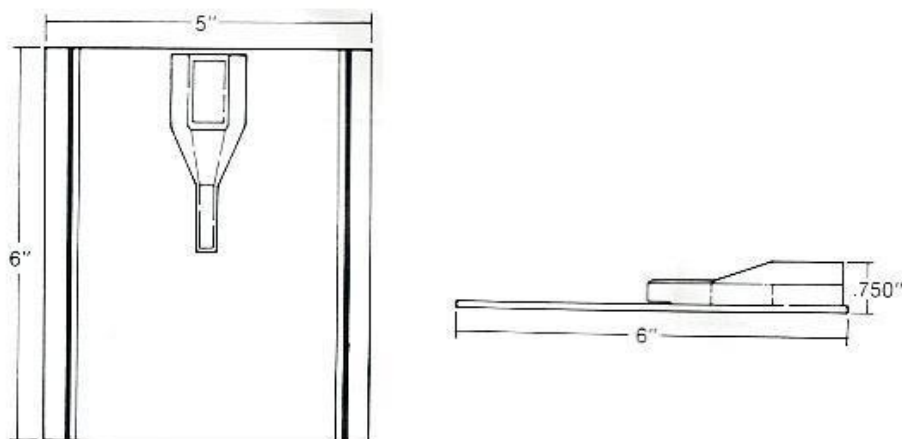
Circuit: High performance transformer circuit for low distortion and lowest possible noise and distortion.

Output: Balanced normally terminated by 1000 ohms or greater.

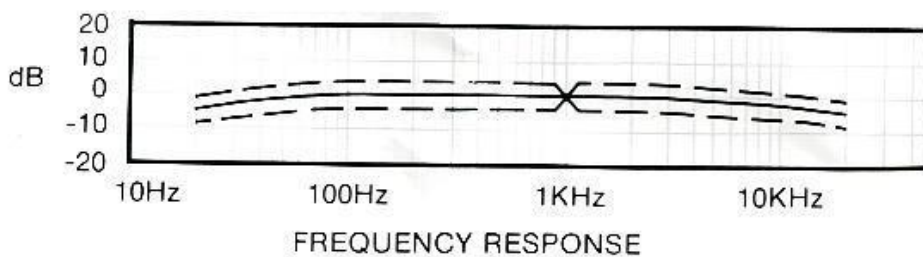
Phantom Supply: 48 volts for best performance, but will operate adequately from 18 to 48 volts.

Connectors: XLR type female input, male output.

J. Dimensional Drawing

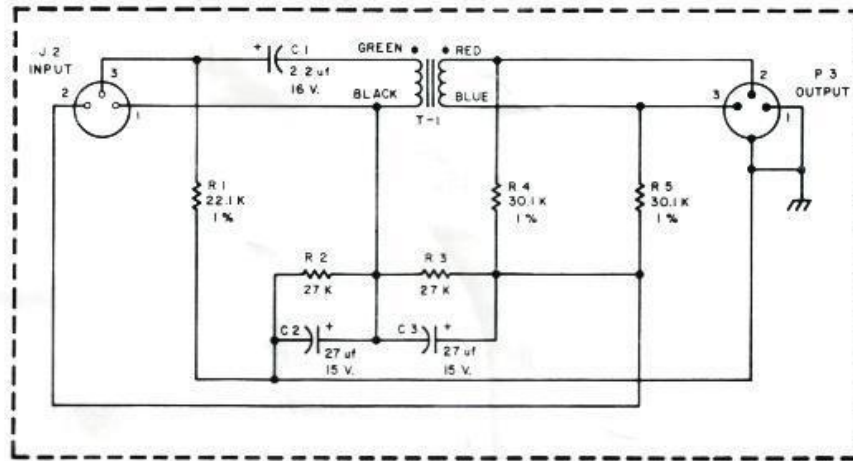


K. Performance Curve



L. Schematic Drawings

PX-T



PX-18

