



VP88

Stereo Condenser Microphone

Online user guide VP88 stereo condenser microphone.
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VP88

Stereo Condenser Microphone

General Description

The Shure Model VP88 is a stereo microphone equally effective in studio broadcasting applications as in the field for electronic news gathering (ENGL).

This stereo microphone combines two condenser cartridges in a single housing, in a mid-side (M-S) microphone cartridge configuration. One cartridge (Mid) faces forward to capture on-axis sound in a cardioid pattern. The other cartridge (Side) is bi-directional, capturing sound from either side.

Containing three settings for different degrees of stereo image separation, the VP88 contains an internal M-S matrix that can be bypassed if an external matrix is used, or if stereo imaging is done in post-production. External switches control output mode, stereo imaging, low-frequency roll off settings, and battery on/off.

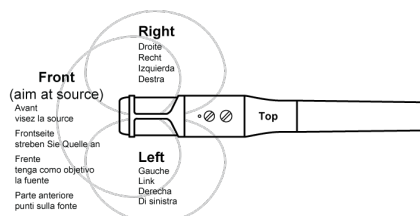
When the VP88 is set for stereo mode operation (H, M, or L), the left and right signals should remain fully separated and kept at equal levels to maintain a balanced stereo effect.

Features

- Time-coherent, Mid-Side (M-S) design for optimal stereo imaging
- Built-in stereo matrix for direct control of the stereo spread; direct M-S outputs provided
- 40 to 20,000 Hz frequency response
- Low noise and distortion, wide dynamic range
- Switch-selectable, low-frequency roll-off (12 dB/octave below 80 Hz) for reduced pickup of ambient noise and stand vibration
- Phantom power or 6V camera battery with LED power indicator
- Internal shock mount for reduced stand vibration and handling noise
- Impact resistant, durable construction
- Integrated heavy-duty "pop" screen
- Windscreen, swivel mount adapter, and Y-cable included

Mounting

The VP88 can be mounted on a standard microphone floor stand, fishpole or boom. Make sure the front of the grille faces the sound source and the top of the microphone faces up, so that the resulting stereo image matches the left and right components of the sound source.



Microphone Orientation

Power

Phantom Power The VP88 can operate on an internal 6V battery or phantom power from any microphone mixer or console providing 9 to 52 Vdc, or by a phantom power supply such as the Shure PS1A. Each balanced audio cable pair (pins 2 and 3: Mid/Left; pins 4 and 5: Side/Right) carries the supply current to the microphone, and the cable shield (pin 1) is the ground return. The Mid or Side output can be used individually with either phantom or battery power. When operating in the Stereo mode without battery, both Mid/Left and Side/Right outputs must be phantom powered.

Battery Power

If phantom power is not available, move the Battery switch to the Batt On position. The adjacent LED will flash indicating at least five hours of useful battery life, and if no flashing is observed the battery should be replaced. The battery does not drain when phantom power is applied.

Installing and Replacing the Battery

The VP88 uses a 6V cylindrical battery commonly used in cameras. Average battery life depends on the type of battery: typically 70 hours for silver oxide/lithium and 40 hours for alkaline.

SPEC. AGENCY/ MANUFACTURER	SILVER OXIDE	LITHIUM	MANGANESE ALKALINE
NEDA	1406SOP	500SL	1414A
IEC	4SR44	2CR1/3N	4LR44
Duracell	PX28	PX28L	
Eveready	544	L544	A544
Kodak	KS28		
Panasonic	4G13		4LR44
Radio Shack			26-469
Varta	V28PX	V28PXL	V4304PX

To install or replace the battery, proceed as follows:

1. Disconnect the microphone cable and unscrew the VP88 lower handle.
2. Carefully slide the lower handle away from the grille, exposing the battery compartment. If necessary, remove the old battery.
3. Insert the new battery, observing the polarity marking in the battery compartment.
4. Slide the lower handle back into position and tighten.

Connections

Use the supplied Y-splitter cable to connect the VP88 to two inputs of a mixer or console. The red connector, marked “M” and “L”, carries the Mid signal (in MS mode) or left signal (in stereo mode). The green connector, marked “S” and “R”, carries the Side signal (in MS mode) or right signal (in stereo mode). For stereo mode operation, connect the left (L) splitter connector to the Channel 1 input and the right (R) splitter connector to the Channel 2 input of the mixer or console. Set the Channel 1 pan pot to full left and the Channel 2 pan pot to full right.

Use the Shure C110 Extension Cable (available as an accessory) for extended cable runs between the VP88 and a mixer or console.

Using an Additional Microphone

A second (mono) microphone can be used for interviewing or close miking. Turn its channel pan pot to the center position and set its level independently.

Monitoring

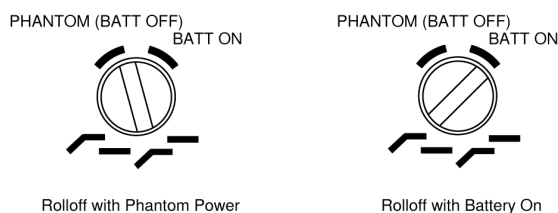
To check the balance for the mono listener, monitor sound in mono mode as well as stereo. Since the side signal is cancelled in mono, the mono output will be equal to the cardioid Mid cartridge signal only, regardless of the side level control setting.

Minimizing Wind and Breath Noise

The integrated pop filter provides reduction of breath and wind sound. Use the removable foam windscreen for high intensity wind and speaking conditions.

Low-Frequency Rolloff

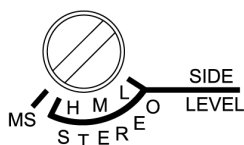
A low-frequency rolloff (12 dB per octave cut below 80 Hz) rolloff reduces pickup of low-frequency noise and vibration. Set the upper control switch on the VP88 to either of the two low-frequency rolloff positions, depending on whether phantom or battery power is being used.



Rolloff Selection Switch

Output Mode

The lower control sets the VP88 to either MS Mode, or one of three Stereo modes. (L, M, or H).



Output Mode Selection Switch

Stereo Output Mode

In Stereo Mode, the VP88 uses its internal matrix to mix the Mid and Side signals and provide Left and Right stereo outputs. The three settings (H, M, and L), determine the strength or width of the stereo effect, as described below. Nominal Left and Right pickup patterns are shown in the following series.

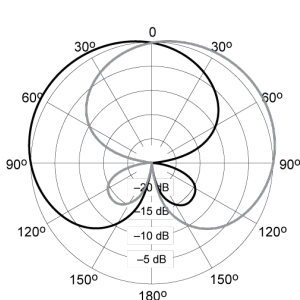
The mono sum (Left + Right) in any Stereo position is always equal to the Mid signal, ensuring mono compatibility.

L (Low): Side level 6.0 dB lower than Mid level. The stereo image spread of the stereo images is small. Use this setting for distant miking, or in situations where the microphone directionality cannot be well controlled, such as hand-held use. In the L position, the microphone also picks up the least amount of ambient sound from the side, and can be used to reduce high ambient noise or reverberation. The L setting can be useful if the area being miked is already very wide. However, the degree of stereo effect may be compromised in narrow performing areas.

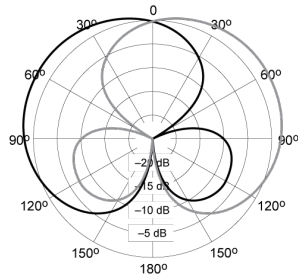
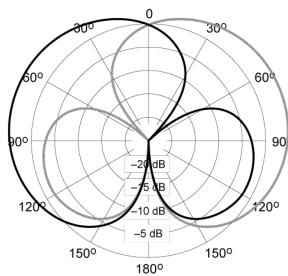
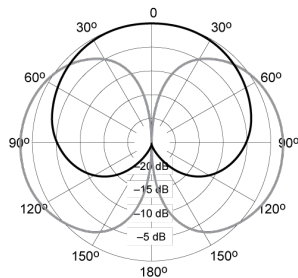
M (Medium): Side level is 1.9 dB lower than Mid level. The increased side ambience pickup and stereo spread make the M setting ideal for most applications.

H (High): Side level is 1.6 dB higher than Mid level. The H position provides the most side ambience pickup and the greatest amount of stereo spread. This setting is only appropriate if a high degree of ambience pickup is acceptable and the performing area is not excessively wide.

MS Output Mode: In MS mode, the VP88's internal stereo matrix is bypassed. The signal from the mid cartridge is sent to the red connector on the Y-splitter cable (M) and the sidecartridge output is sent to the green connector (S). The Side on-axis sensitivity (90° from the front axis of the microphone) is 1.6 dB higher than the on-axis sensitivity of the Mid output. The sensitivities of the Mid and Side outputs are equal at 45° off the front axis of the microphone. The polarity of the left lobe of the Side output matches the polarity of the Mid output. The right lobe of the Side output is opposite polarity.



Low Stereo (L)

**Medium Stereo (M)****High Stereo (H)****MS Output Mode**

External Matrixes

When using an external stereo matrix, such as a matrix transformer or active matrix circuitry, set the VP88 to MS mode. The Mid and Side outputs can be processed through a sum-and-difference matrix to produce Left and Right stereo signals as follows:

Left = Mid + Side

Right = Mid - Side

An 1:1 ratio of Mid to Side produces stereo signals identical to those obtained with Stereo Output switch set to High (H). Results similar to the Medium (M) and Low (L) settings can be obtained by attenuating the side signal before matrixing.

An external matrix can be useful when recording, because decisions on stereo imaging are deferred to the post-production stage.

Specifications

Type

Single-point stereo (MS configuration) condenser

Polar Pattern

Mid Cartridge	Cardioid
Side Cartridge	Bidirectional

Frequency Response

40 to 20,000 Hz

Output Impedance

EIA rated at 150 Ω (100 Ω actual)

Sensitivity

open circuit voltage, @ 1 kHz, MS Mode

-66 dB[1] (0.5 mV)

Maximum SPL

800 Ω load	129 dB
150 Ω load	119 dB

Signal-to-Noise Ratio[3]

70 dB

Dynamic Range

105 dB Maximum SPL, A-weighted

Clipping Level

@ 1 kHz, 1% THD

800 Ω load	Mid Cartridge	-12 dBV (0.25 V)
	Side Cartridge	-10 dBV (0.30 V)
150 Ω load	Mid Cartridge	-25 dBV (0.06 V)
	Side Cartridge	-19 dBV (0.11 V)

Self Noise

equivalent SPL

24 dBA-weighted, 28 dB typical

Hum Pickup

-4 dB equivalent SPL in a 1 millioersted field (60 XXXXXXXXXXXXXXX)

Operating Temperature Range

-18°C (0°F) to 57°C (135°F)

Storage Temperature Range

-29°C (-20°F) to 74°C (165°F)

Operating Relative Humidity

0 to 90%

Polarity

Positive pressure applied from any direction to the Mid cartridge or from the left to the Side cartridge in the MS mode, or applied from the front in the Stereo mode produces positive voltage on pin 2 relative to pin 3 (Mid/Left) and pin 4 relative to pin 5 (Side/Right).

Housing

Brass and nickel-plated aluminum construction with stainless steel grille. Finished in satin black vinyl enamel

Power Requirements

9–52 V DC[4] phantom power (IEC-61938) , 1.3 mAoutput, 2.6 mAtotal

Battery

Type	6 Vcylindrical
Life	70 hours
Current Drain	2.4 mAtotal

Overvoltage ProtectionMaximum External Voltage applied to Pins 2 through 5 with respect to Pin 1: ± 75 Vdc**Net Weight**

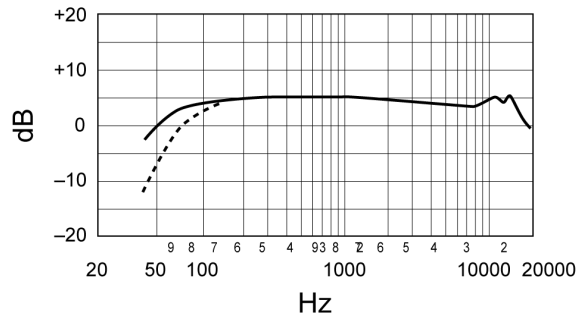
417 g (14.7 oz.)

[1] 1 Pa=94 dB SPL

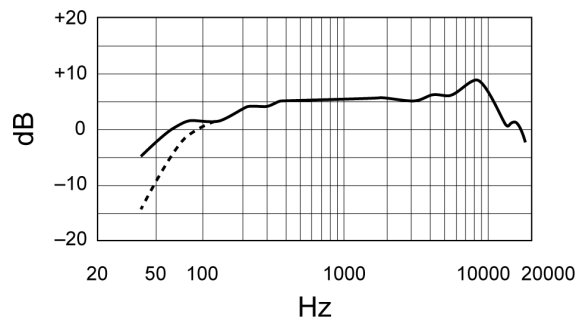
[3]S/N ratio is the difference between 94 dB SPL and equivalent SPL of self noise, A-weighted

[4]All specifications measured with a 48 Vdc phantom power supply. The microphone operates at lower voltages, but with slightly decreased headroom and sensitivity.

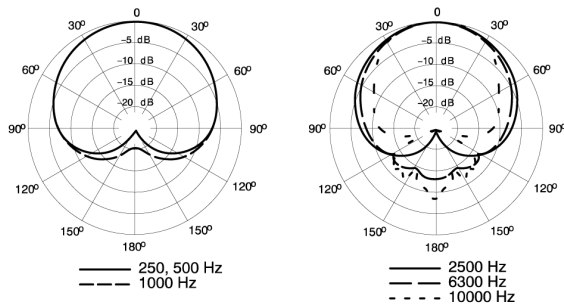
Frequency Response and Polar Patterns



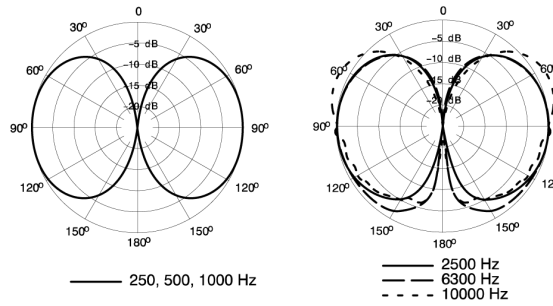
Typical Frequency Response of Middle Cartridge



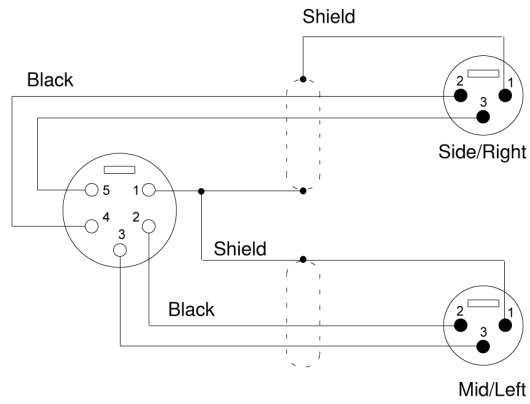
Typical Frequency Response of Side Cartridge



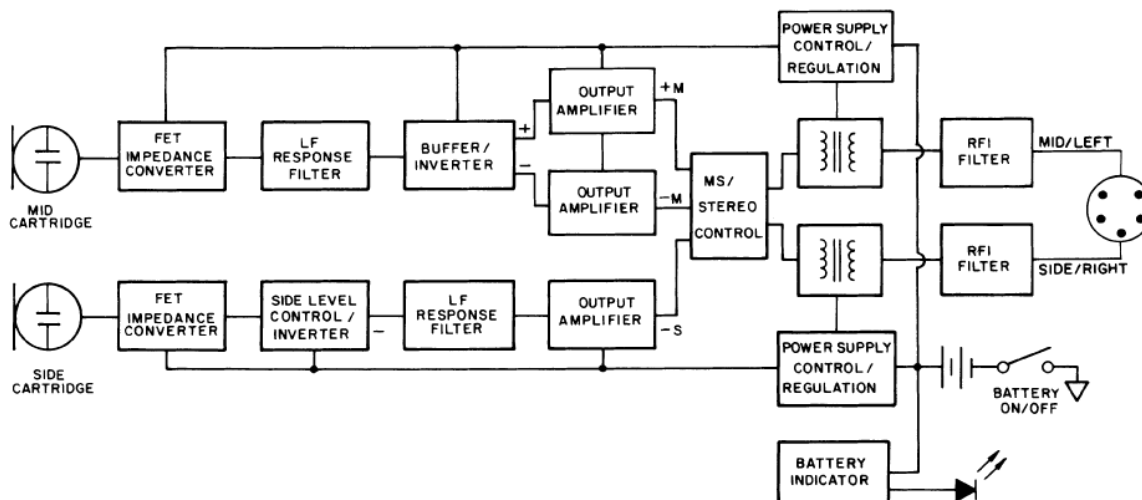
Typical Middle Cartridge Polar Pattern



Typical Side Cartridge Polar Pattern



Cable Connections



Accessories

Furnished Accessories

Battery	80A463
Zipper Bag	95B2313
Foam Windscreen	49A91
Swivel Stand Adapter	90G4046
0.76 m (30 in) Y-Splitter Cable	95A2300

Optional Accessories

Control Knob	65B1218B
Telescoping Tripod Microphone Floor Stand up to 14 ft (4.3 m) with carrying case	S15A

Certifications

Note: Testing is based on the use of supplied and recommended cable types. The use of other than shielded (screened) cable types may degrade EMC performance.

The CE Declaration of Conformity can be obtained from: www.shure.com/europe/compliance

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