

QE MIC QV MIC

AEROBICS AND VOCAL

HEADSET MICROPHONE

PM4 PHANTOM POWER ADAPTOR

OWNERS MANUAL


QE AEROBICS MIC

A black over-the-ear headset microphone with a boom arm and a single microphone capsule. It is connected to a cable.

QV VOCAL MIC

A black over-the-ear headset microphone with a boom arm and two microphone capsules. It is connected to a cable.

PM4 Phantom
power adaptor

A black cylindrical phantom power adaptor with a 3-pin XLR connector on one end and a 2-pin TRRS connector on the other.

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I N T R O D U C T I O N

Thank you for purchasing the Samson QE/QV Headset Microphone with the PM4 phantom power adaptor. These professional hands-free microphones are specially designed for performing musicians and dancers, sportscasters and aerobics instructors (the QE model is water resistant and is optimized for aerobics use and high-humidity environments). Manufactured with extreme care and the highest quality components, they deliver an exceptionally clear, articulate sound, with superior rejection of background noise. The QE/QV Headset along with the PM4 phantom power adaptor are well-suited for any vocal amplifying situation.

In this manual, you'll find a more detailed description of the features of your QE/QV Headset, as well as instructions for using your QE/QV Headset with the PM4 phantom power adaptor, and complete specifications. You'll also find a warranty card enclosed—don't forget to fill it out and mail it in! This will enable you to receive online technical support and will allow us to send you updated information about other Samson products in the future.

I N T R O D U C T I O N

Should your QE/QV Headset or PM4 ever require servicing, a Return Authorization number (RA) must be obtained before shipping your unit to Samson. Without this number, the unit will not be accepted. Please call Samson at 1-800-3SAMSON (1-800-372-6766) for a Return Authorization number prior to shipping your unit. Please retain the original packing material and, if possible, return the QE/QV Headset in its original carton and packing materials.

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Fax: 516-364-3888

FEATURES

The Samson QE/QV Headset utilizes state-of-the-art headset microphone technology and is engineered to the finest detail. Here are some of its main features:

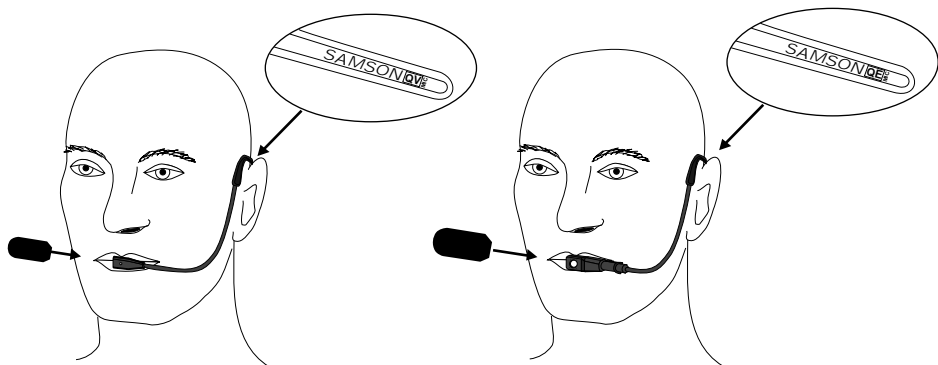
- Lightweight, low visibility design for unobtrusive use.
- High quality electret condenser element delivers high output and exceptional sound quality.
- Full range frequency response for clear, crisp audio. The QV Headset is virtually flat to 10kHz, while the QE Headset utilizes a midrange “presence” peak for optimum reproduction of speech.
- Tight hypercardioid polar pattern (in the QV) and bi-directional noise cancellation design (in the QE) reduces background noise, minimizes feedback problems and effectively rejects signals not originating directly in front of the mic capsule.
- QE Headset includes internal radio frequency (RF) suppression, making it suitable for use in high-RF urban areas.

FEATURES

- Microphones are molded to high quality gooseneck booms constructed of brass over stainless steel wire with matt black polyurethane covering. Compliant molding reduces microphone handling noise, and the booms bend smoothly, hold their shape and are rated to withstand over a thousand 90° bends without degrading.
- Both the QV and QE Headsets are moisture protected, and the QE is water resistant, making it the microphone of choice for aerobics instruction or in other high-humidity environments.
- Both the QV and QE Headset microphones terminate with a P3 connector which plugs into to the PM4 phantom power adaptor.
- The PM4 phantom power adaptor is used to supply the QE/QV microphone with phantom power, while transforming the impedance from high to low to compensate for longer cable runs.

USING YOUR QE/QV HEADSET

As shown in the illustrations below, the correct way to wear your QE/QV Headset is over the ears, as you would wear a pair of eyeglasses.



The QE/QV Headset is specially designed to be used up close, so be sure to adjust the microphone to be directly in front of your lips, as shown in these illustrations. Although it generates significantly less handling noise than most other headsets (due to its compliant molding), it should be left in one position during use. To avoid feedback problems, take care not to cover the mic capsule with your hand.

USING YOUR QE/QV HEADSET

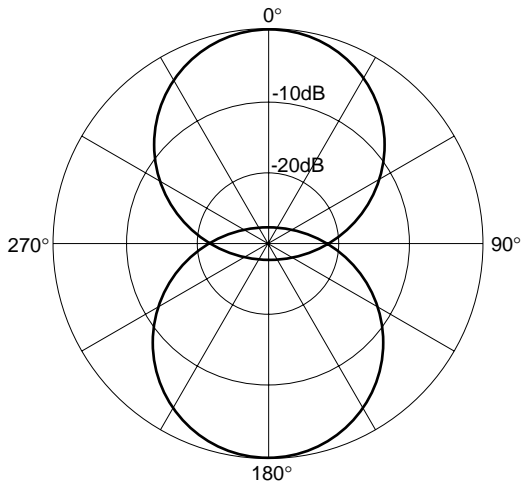
Slide the foam windscreen over the microphone ,as shown in the illustration on the previous page, to eliminate wind noise.

The PM4 phantom power adaptor with its special interface, enables a mixer to provide phantom power to condenser, piezo or electric microphones. The PM4 converts high impedance (50 k – 10meg ohm) to low impedance (600 ohms) allowing long cable runs without noise and gain loss.

Connect the P3 plug from your QE/QV Headset into the locking input of the PM4. Connect an XLR cable from the PM4 to the input of your mixer. Clip the PM4 to your belt loop or some other part of your clothing, as in the photos on the box cover, as not to cause strain by pulling on the wire coming from the headset. You should also select a thin, lightweight XLR cable for this interface.

USING YOUR QE/QV HEADSET

Every microphone has a characteristic polar pattern that determines how well it accepts or rejects signals coming from various areas around the microphone. A type of design which is particularly good at rejecting background noise is the bi-directional polar pattern utilized by the QE Headset, as shown in the illustration on the left.

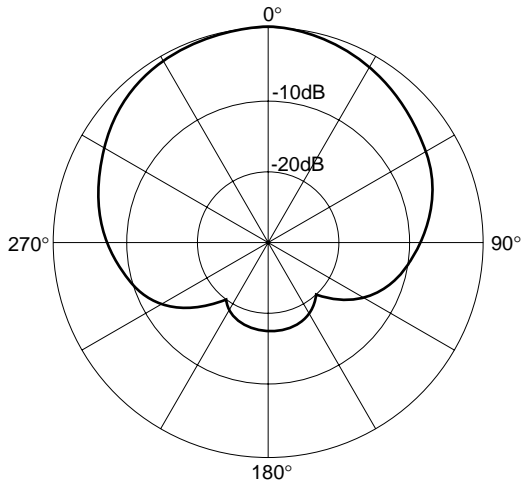


bi-directional polar pattern utilized by the QE Headset, as shown in the illustration on the left.

*QE Headset Polar Pattern
(measured at 1 kHz)*

USING YOUR QE/QV HEADSET

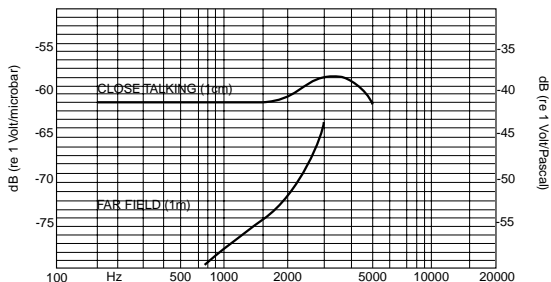
Omnidirectional mics accept all signals regardless of wherever those signals originate (in front of the mic, behind it, to the side, etc.). In contrast, directional cardioid mics are specifically designed to accept mostly signals coming from directly in front, and to reject signals coming from behind or from the side. The most extreme variation of cardioid is the hypercardioid pattern utilized by the QV Headset (as shown in the illustration on the right); this yields maximum rejection of signal coming from any direction other than directly in front of the mic.



*QV Headset Polar Pattern
(measured at 1 kHz)*

USING YOUR QE/QV HEADSET

In the QE Headset, three noise cancelling modes operate together to provide 20 - 30 dB of noise reduction: First, the small size of the mic capsule and the short distance between front and rear ports reduces the sensitivity at 1 kHz to far field noise by 15 dB compared to the close talking response. Secondly, as shown in the frequency response graph below, noise at lower frequencies is additionally attenuated. And, finally, the bi-directional polar pattern reduces signal coming from a 90° angle by 20 dB more (and random signal by 5 dB more) compared to signal originating from directly in front of the mic capsule.



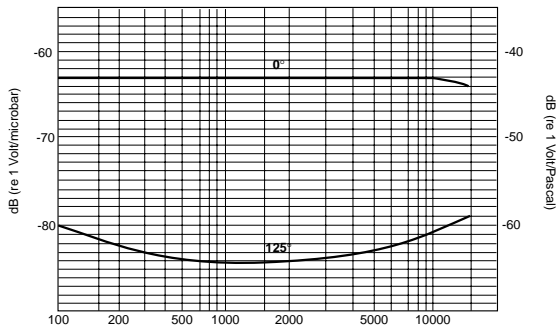
QE Frequency Response

The frequency response of the QV Headset (which is virtually flat across the entire audible range) is shown in the illustration on the following page:

USING YOUR QE/QV HEADSET

Because of their polar patterns, frequency response, and noise cancellation design, both the QV and QE Headsets excel in environments where there is a good deal of unwanted ambient sound—they deliver those signals originating directly in front of the mic capsule itself while rejecting those that originate from other directions.

The polar pattern also determines how prone a particular mic is to inducing feedback. Feedback is that characteristic nasty howling sound that occurs when a mic is placed too close to a loudspeaker—the signal from the loudspeaker is fed into the mic, then into the loudspeaker, then into the mic, over and over again until an oscillating tone is generated. Because the QE/QV Headsets are so good at rejecting signal not coming from directly in front of the mic, you'll find that their use greatly minimizes feedback problems.



QV Frequency Response

S P E C I F I C A T I O N S

QE and QV

Generating Element:	Back electret condenser
Polar Pattern	
QE (water-resistant):	Bi-directional noise cancelling,
QV:	Hypercardioid pressure gradient type
Mounting system:	Adjustable headband and gooseneck
Sensitivity	
QE:	80 mV @ 114 dB SPL
QV:	70 mV @ 114 dB SPL
Max.SPL:	145 dB
Weight:	1.92 oz. • 54.4 grams

SPECIFICATIONS

PM4 (For use with QE/QV Headset Mics)

Frequency Response (+0, 1.5dB): 20Hz—20kHz

Connectors

Input: TA3M Switchcraft
Output: XLR Male (gold plated)

Operating Voltage: 12 Vdc through 48 Vdc

Impedance (@ 1kHz nominal)

Input: 2k Ω
Output: 600 Ω balanced (transformer coupled)

Input Wiring

Pin 1: GND
Pin 2: Audio
Pin 3: + Phantom

Output Wiring

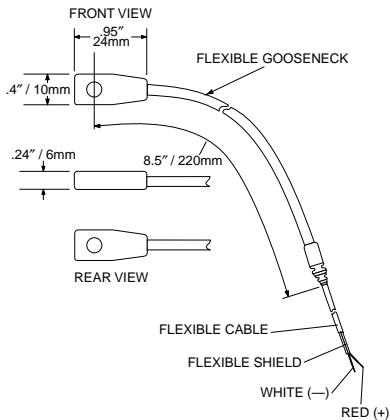
Pin 1: GND
Pin 2: Hot +
Pin 3: Cold -

Casing: Zinc, die cast
Stainless steel belt clip

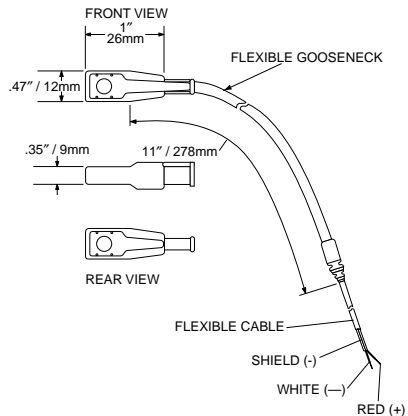
Dimensions

Length: 3.7" • 93.75mm
Diameter: 0.86 • 22mm

SPECIFICATIONS

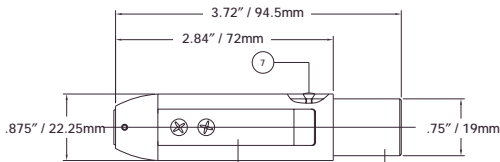


QV Dimensions

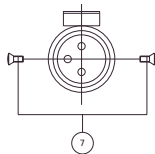
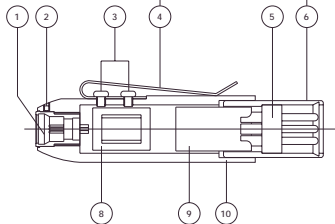


QE Dimensions

SPECIFICATIONS



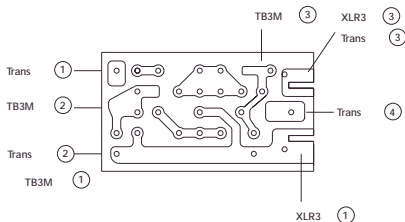
MODEL	PM-4	QTY	QTY 1
NO	DESCRIPTION	SPECIFICATION	
1	RECEPTACLE ASSY	TB3M	1
2	SET SCREW	M2x2	1
3	SET SCREW	SCREW	1
4	CLIP	M2xL4(FH)	2
5	3P CONNECTOR ASSY	CLIP	1
6	CONNECTOR HOLDER		1
7	CASE SCREW	SC GOLD	1
8	TRANS		1
9	PCB		2
10	CASE		1



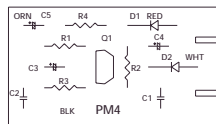
PM4 Mechanical

SPECIFICATIONS

1 PATTERN



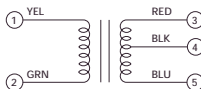
2 SILK PRINT



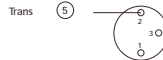
TB3M



Trans



XLR3



PM4 Circuit board

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