



GENERAL

The Shure Model 838 is a miniature, lavalier condenser microphone designed for sound reinforcement applications where a tiny, high-quality lavalier microphone is required. The 838's wide frequency response, low distortion and RF susceptibility, and reliable operation at temperature and humidity extremes make it suitable for use in clubs, hotels, schools, churches, virtually anywhere an entertainer or speaker needs optimum sound without the distraction of conventional microphones and stands.

The 838 features a specially tailored frequency response designed to provide a more natural "stand mike" sound when the microphone is chest-worn. This response is achieved by an acoustically generated high-frequency boost for a flatter response in the lavalier position. In addition, a 12 dB/octave rolloff below 100 Hz helps reduce room noise and other undesirable low-frequency signals.

In addition to the microphone's small size, the 838's cable emerges from the side, rather than the bottom, of the microphone housing. This arrangement makes the thin, strong microphone cable even more unobtrusive by eliminating the distracting cable loop visible below most lavalier microphones.

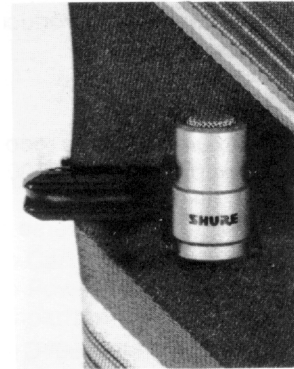
The 838 is powered by a readily available 9-volt battery (not supplied) installed in the power supply assembly.

The 838 consists of the following: microphone with attached power supply cable; power supply with attached cable and three-pin XLR audio connector; tie bar mount; and acoustic windscreen to minimize wind noise in outdoor applications such as live remotes and political rallies.

Features

- Wide-range frequency response specially tailored for chest-worn microphone operation
- Controlled low-frequency rolloff reduces low-frequency clothing and room noise
- Low distortion and wide dynamic range characteristics under various load impedances
- Tiny size and light weight for inconspicuous use
- Usable over wide range of temperature and humidity conditions
- Rugged construction for outstanding reliability
- Fast and simple user installation
- Power supply can be pocketed, strapped to body, or clipped to belt or waistband

MODEL 838 CONDENSER LAVALIER MICROPHONE



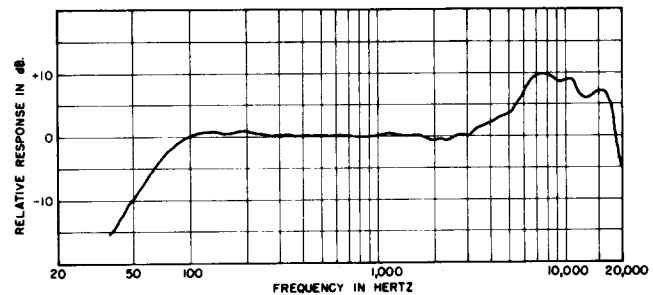
SPECIFICATIONS

Type

Condenser (electret bias)

Frequency Response

80 to 20,000 Hz (see Figure 1)



TYPICAL FREQUENCY RESPONSE
FIGURE 1

Polar Pattern

Omnidirectional

Output Impedance

600 ohms

Output Level (at 1,000 Hz)

Open Circuit Voltage -73 dB (0.22 mV)
(0 dB = 1 volt per microbar)

Clipping Level (at 1,000 Hz, 3% THD)

2000-ohm Load -12 dBV (0.25V)
800-ohm Load -19 dBV (0.11V)

Maximum SPL

137 dB with 2000-ohm load
132 dB with 800-ohm load

Hum Pickup

2 dB equivalent SPL in a 1 millioersted field (60 Hz)

CONDENSER LAVALIER MICROPHONE

SHURE
MODEL 838

Output Noise (equivalent sound pressure levels; measured with true rms voltmeter)

- 26 dB typical, A-weighted
- 32 dB typical, weighted per DIN 45 405

Dynamic Range

111 dB (maximum SPL to A-weighted noise level)

Signal-to-Noise Ratio

68 dB (IEC 179) at 94 dB SPL

Phasing

Positive pressure on diaphragm produces positive voltage on pin 2 relative to pin 3

Power

Battery: 9 Vdc (type 1604A, alkaline recommended); 0.2 mA current drain; approximately 2500 hours continuous use with fresh alkaline battery
Mechanically protected against reverse voltage application

Environmental Conditions

Operating Temperatures .. -18° to 60°C (0° to 140°F)
Storage Temperature .. -29° to 66°C (-20° to 150°F)

Cables

Microphone: 1.5m (5 ft), attached, two-conductor, shielded

Power Supply: 3m (10 ft) attached, two-conductor, shielded, TRIPLE-FLEX® with 3-pin professional audio connector*

Case

Microphone: Brass construction with bronze finish and stainless-steel-mesh grille

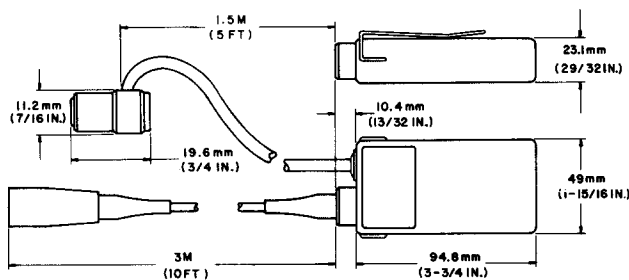
Power Supply: Black molded high-impact plastic with detachable belt clip

Dimensions

See Figure 2

Net Weight

Microphone: 6 grams (0.21 ounces)
Power Supply: 271 grams (9.49 ounces) including battery and cables



OVERALL DIMENSIONS
FIGURE 2

*Designed to mate with Cannon XL series, Switchcraft A3 (Q.G.) series or equivalent connectors.

BATTERIES

The 838 is powered by a 9-volt battery (alkaline types are recommended). Under normal operating conditions, a fresh alkaline battery should provide approximately 2500 hours of operation. Recommended battery types are:

- | | |
|--------------------|----------------------|
| Duracell MN1604 | NEDA 1604A |
| Eveready 522 | IEC 6LR22 |
| Bright Star 7590 | Japanese 6AM6 |
| Ray-O-Vac A1604 | Varta 4022 |
| Radio Shack 23-553 | U.S. Military BA3090 |

Note that the 838 is designed without an on-off switch; the power supply is on whenever a “good” battery is inserted. The highly efficient circuit can operate for three months continuously with a fresh alkaline battery.

To insert the battery, depress the ridged area of the case and swing the hinged door outward. Insert the battery in the compartment, battery terminals toward the hinge and positive terminal inward (the negative contact is marked inside the compartment). Depress the battery slightly and hook it under the “ledge” in the compartment. The ledge and spring contacts will retain the battery even if the door or hinges are damaged. Close and lock the door. Note that the door will not lock if the battery is incorrectly inserted; the positive and negative contact areas accept only the corresponding battery terminals.

To prevent battery drain when the unit is not in use, the battery should be removed or stored in the battery compartment upside down (contacts upward) and positive contact inward. If the unit is not used for a prolonged period, the battery should be removed to prevent possibility of damage from leakage.

WIND NOISE

A lavalier microphone generally needs no windscreens for proper operation. However, when used outdoors under windy conditions, the acoustic foam windscreen helps eliminate the unpleasant “rushing” noise associated with outdoor miking.

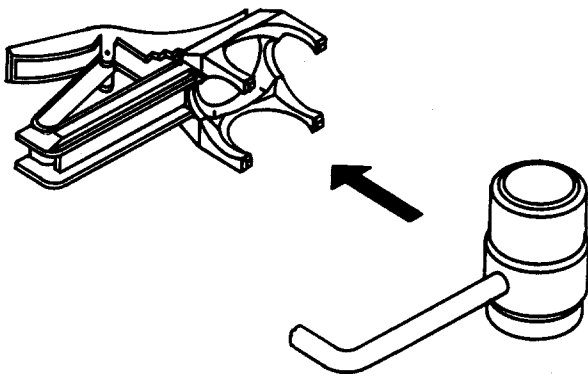
MOUNTING

The tie bar mount attaches to a blouse, shirt, coat or tie using the spring-loaded tie clasp. After the microphone is snapped into the mounting block, the cable is tucked into the channel behind the microphone (see Figure 3). The unique construction of the mounting block permits the microphone to be mounted in four different positions. In addition to the conventional method shown in Figure 3, the tie bar can be reversed for left-buttoning apparel, or attached vertically to V-neck clothing.

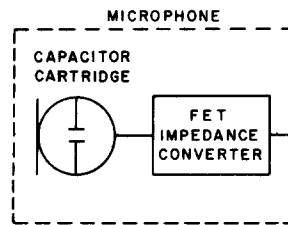
Most applications require that the power supply be worn on the body. The spring-loaded belt clip holds the power supply to a belt, skirt or trouser waistband, or inside pocket.

The belt clip can be removed from the case and the power supply placed on a nearby horizontal surface or worn in an inside pocket without any retention method. Clip removal requires disassembly of the case (two Phillips screws in the case and two slotted screws in the connector collar).

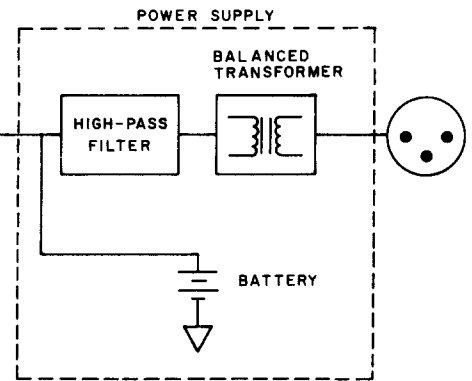
Note that the “W-shaped” belt clip permits the power supply to be worn with the cable end either upward or downward, depending on the speaker’s comfort and the particular application.



TIE BAR MOUNTING
FIGURE 3



BLOCK DIAGRAM
FIGURE 4



BLOCK DIAGRAM
FIGURE 4

CIRCUIT DESCRIPTION

A block diagram of the 838 is shown in Figure 4. The capacitor cartridge is followed by a field-effect transistor impedance conversion stage. The FET output is coupled through a two-conductor, shielded cable to the power supply assembly. The signal enters a 12 dB/octave high-pass filter, followed by a transformer-coupled, balanced output. The design of the capacitor cartridge and the selection of the following circuitry ensure low noise and distortion, wide frequency response and dynamic range, and reliable operation over a wide range of working environments.

SERVICING

TROUBLESHOOTING

The following steps should be taken if problems arise.

1. Check that battery voltage is adequate.
2. If a second 838 is available, connect it to the same microphone input to see if the problem is in the mixer or amplifier.
3. Remove power supply case cover* and check microphone and power supply cables for continuity.

*Remove four screws: two Phillips in the case and two slotted in the connector collar.

REPLACEMENT PARTS

Microphone Cartridge-Housing	R133
Microphone-Power Supply Cable	90A3785
Battery Compartment Door	65A1480
Belt Clip	44A278

FURNISHED ACCESSORIES*

Tie Bar	RK240SB
Windscreen	RK242WS

OPTIONAL ACCESSORIES*

Universal Mounting Block	RK239MB
Dual-Mount Tie Bar	RK241DB

*Furnished in multiples of 4.

GUARANTEE

This Shure product is guaranteed in normal use to be free from electrical and mechanical defects for a period of one year from date of purchase. Please retain proof of purchase date. This guarantee includes all parts and labor. This guarantee is in lieu of any and all other guarantees or warranties, express or implied, and there shall be no recovery for any consequential or incidental damages.

SHIPPING INSTRUCTIONS

Carefully repack the unit, have it insured, and return it prepaid to:

Shure Brothers Incorporated
Attention: Service Department
222 Hartrey Avenue
Evanston, Illinois 60204

If outside the United States, return the unit to your dealer or Authorized Shure Service Center for repair. The unit will be returned to you prepaid.

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