

## CERAMIC NOISE-CANCELING COMMUNICATIONS MICROPHONE



### GENERAL

The Model 202 ceramic, noise-canceling communications microphone is designed for clear, crisp, natural voice response in even the noisiest surroundings. Noise cancellation is provided through the combination of highly directional operation and superior discrimination against noise from distant sources over a wide frequency range. The Model 202 is particularly suited for mobile use where wind, traffic, engine, or other background noise may otherwise interfere with voice transmission.

Model 202 is relatively immune to adverse temperature and humidity, and it will operate in temperatures to 71°C (160°F).

The microphone is high impedance, and is equipped with a heavy duty push-to-talk switch to control the microphone circuit and an external relay or switching circuit.

Model 202 fits naturally and comfortably in the hand. The exclusive ARMO-DUR® case is immune to oil, grease, fumes, salt spray, sun, rust, and corrosion — and is outstanding in its ability to resist mechanical shocks and vibration. It is designed to withstand rigorous operating conditions and constant use.

### Microphone Features:

- Highly intelligible voice response
- Effective noise cancellation
- Reliable, high-output ceramic cartridge
- Tough, rubber-jacketed, four-conductor coiled cable
- Rugged ARMO-DUR case
- Mounting bracket supplied — fits hang-up button on microphone

### NOISE CANCELLATION

The important characteristics contributing to noise cancellation and clear speech transmission in the Model 202 are shaped frequency response, directionality, and distance discrimination.

**Shaped Frequency Response:** The acoustical response is arranged to optimize performance in the critical voice frequency range of 200 to 4,000 Hz. The result is the reduction in pickup of sounds outside the desired frequency range and proper control of those sounds within the desired range.

**Directionality:** Through its inherent directional properties, Model 202 reduces pickup of off-axis sounds, all sounds extraneous to the user's voice.

**Distance Discrimination:** The Model 202 discriminates against sounds arriving from a distance in favor of sounds from a near source. The microphone operates on the pressure gradient principle. Two sound entry ports spaced a small distance apart produce, by means of phase cancellation, reduction of sensitivity to all distant sounds.

### OPERATION

In order to obtain the best noise-canceling performance with the Model 202, "close-talking" is required. The lips must be as close as possible to the microphone grille and directly facing it. For greatest discrimination between voice sounds and background noise, do not hold the microphone more than 25 mm (1 in.) from the mouth.

No polarizing voltage is required for ceramic microphones. Ceramic microphones may be seriously damaged if accidentally connected to loudspeaker or power supply outlets carrying high voltage. Check your connections carefully. When used near a radio transmitter, cable should be kept to the minimum length consistent with placement requirements.

Model 202 will operate satisfactorily under all ordinary conditions of humidity, heat, and cold. Dropping the microphone or other such severe mechanical shocks should be avoided.

## CONNECTIONS

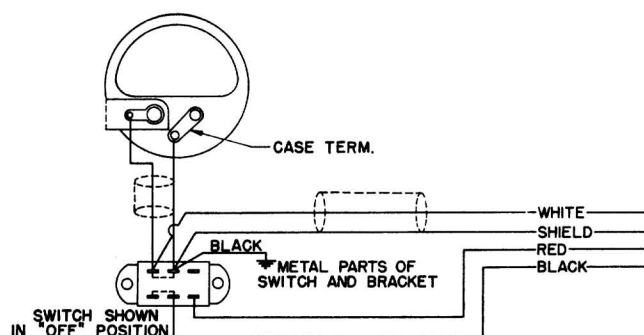
The Model 202 is a high-impedance microphone with a double-pole single-throw slide switch to control the microphone circuit and an external relay or switching circuit. The cable is a three-conductor, one conductor shielded, coiled cord. Added cable length will be accompanied by a decrease in output, although no frequency discrimination will be introduced.

The internal connections of the Model 202 are shown in Figure 1. Connect the cable leads as follows:

WHITE to the high-impedance audio input circuit

SHIELD to chassis or circuit ground

RED and BLACK to the relay or switching circuit.



INTERNAL CONNECTIONS

FIGURE 1

## SPECIFICATIONS

### Type

Ceramic, Noise-Canceling

### Frequency Response

200 to 4,000 Hz

### Internal Impedance

Equivalent to 1200 pF

### Load Impedance Range

Minimum: 1 megohm

Recommended: 5 megohms

### Output Level (at 1,000 Hz)

Open Circuit Voltage ..... -14.5 dB (0.19V)  
(0 dB = 1 volt per 100 microbars)

### Switch

Push-to-talk switch to actuate microphone circuit and relay or switching circuit. Microphone circuit normally closed.

### Cable

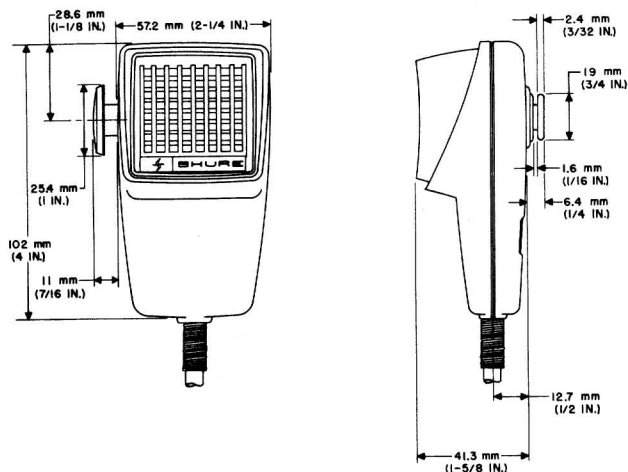
1.7m (5½ ft) extended, three-conductor, one conductor shielded, coiled cable. 1,000 pF capacitance.

### Case

Gray ARMO-DUR®

### Dimensions

See Figure 2



OVERALL DIMENSIONS

FIGURE 2

### Net Weight

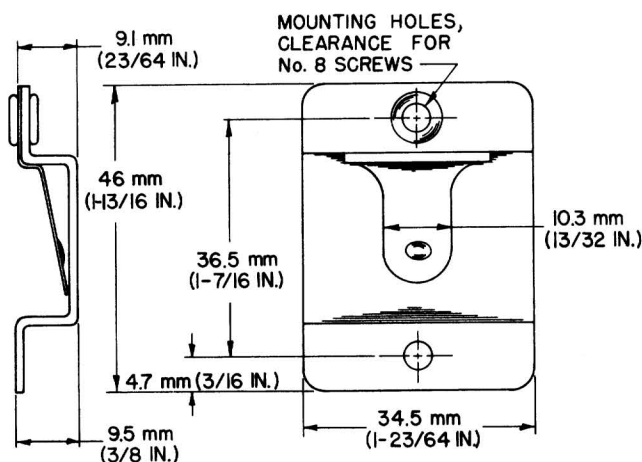
283 grams (10 oz)

### Packaged Weight

425 grams (15 oz)

## MOUNTING

A mounting bracket for permanent installation is supplied with the microphone (see Figure 3)



MOUNTING BRACKET

FIGURE 3

## FURNISHED ACCESSORY

Mounting Bracket ..... RK6MB

## REPLACEMENT PARTS

Cartridge ..... 99D404

Cable ..... C20C

Switch Button ..... 65A189B

## 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 and return it prepaid to:  
Shure Brothers Incorporated  
Attention: Service Department  
1501 West Shure Drive  
Arlington Heights, Illinois 60004

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.