

**SHURE**

222 HARTREY AVE., EVANSTON, IL. 60204 U.S.A.

MICROPHONES AND ELECTRONIC COMPONENTS

AREA CODE 312/328-9000 • CABLE: SHUREMICRO

**DATA SHEET****MODEL 104C**

## HAND-HELD CARBON MICROPHONE

### GENERAL

The Shure Model 104C is a small, pressure-actuated, diaphragm-type, carbon microphone specially designed for clear, efficient speech reproduction. The 104C fits naturally and comfortably in the hand, and retains this feel in hot or cold weather. The sturdy, high-impact Armo-Dur case is light and compact, and occupies minimal space in portable or mobile equipment.

The 104C is equipped with a heavy-duty, push-to-talk switch and a long life, rubber-jacketed coil cord cable.

### Model 104C Features:

- Frequency response from 300 to 4,000 Hz, specifically designed for voice communications use
- Small, light and compact case, takes minimum space in portable and mobile equipment, fits comfortably and firmly in the hand
- Extremely rugged, high-impact Armo-Dur case, stronger and lighter than die-cast metal, comfortable to the touch in hot or cold weather
- Double-pole, single-throw, leaf-type switch designed to stand up under rigorous operating conditions and constant usage
- Long life, rubber-jacketed coil cord
- Rugged and dependable under all operating conditions

### APPLICATIONS

The Model 104C is especially recommended for all types of outdoor and indoor communication activity: in mobile and fixed station use (as in police, fire, utility, forestry and transportation services), and in commercial and industrial applications—including radiotelephone, amateur radio and similar uses. The microphone is also suitable for voice applications in indoor and outdoor public address.

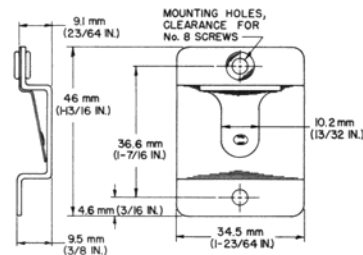
The Model 104C will operate satisfactorily under most conditions of temperature and humidity.

The Model 104C is a replacement for Shure Model 101C, 101E, 102C, 102E, 104A and 104B Carbon Microphones.



### INSTALLATION AND CONNECTIONS

A mounting bracket for permanent installation is supplied with the Model 104C (see Figure 1).



MOUNTING BRACKET  
FIGURE 1

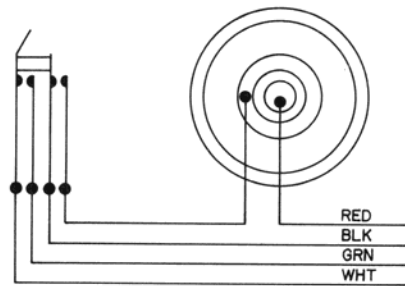
The internal switch connections of the Model 104C are shown in Figure 2. The Model 104C has a double-pole, single-throw, normally open, leaf-type switch to control the microphone and relay or switching circuits.

The Model 104C has a four-conductor coiled-cord cable: The RED and BLACK leads are the microphone circuit, and the GREEN and WHITE leads are for connection to the relay or switching circuit.

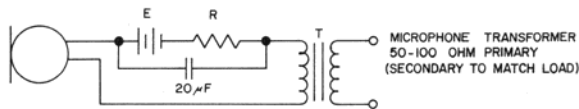
A typical operating circuit using the Model 104C is shown in Figure 3. The voltages (E) and corresponding resistances required to limit the operating current through the carbon cartridge to approximately 50 mA are as follows:

E (volts)	Total Minimum Circuit Resistance (ohms)
4.5	50
6	100
12	200
24	500

Note that the resistance value includes both resistance R in the figure plus other dc circuit resistance (transformer primary, etc.). The Model 104C will operate satisfactorily with current up to 50 mA. However, no damage will result if the current rises to 100 mA. The resistance of the carbon cartridge is 30 ohms with 50 mA flowing through the cartridge.



INTERNAL CONNECTIONS  
**FIGURE 2**

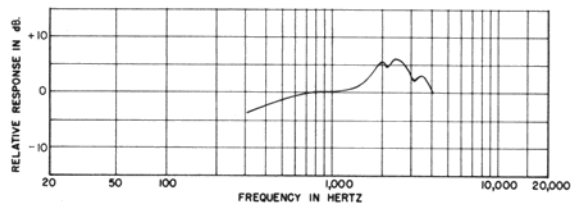


TYPICAL OPERATING CIRCUIT  
**FIGURE 3**

## SPECIFICATIONS

**Type**  
Carbon

**Frequency Response**  
300 to 4,000 Hz (see Figure 4)



TYPICAL FREQUENCY RESPONSE  
**FIGURE 4**

**Recommended Load Impedance**  
50 to 100 ohms

**Actual Impedance**  
30 ohms (with 50 mA current)

**Output Sensitivity**  
5 dB below 1V for 100 microbar signal. (Voltage measured across 100-ohm load)

## Recommended Operating Current

50 mA (20 mA minimum,  
120 mA maximum)

## Switch

Double-pole, single-throw, leaf-type to control microphone and relay circuits

## Cable

Non-detachable, 1.8m (6 ft), four-conductor, coiled cable

## Case

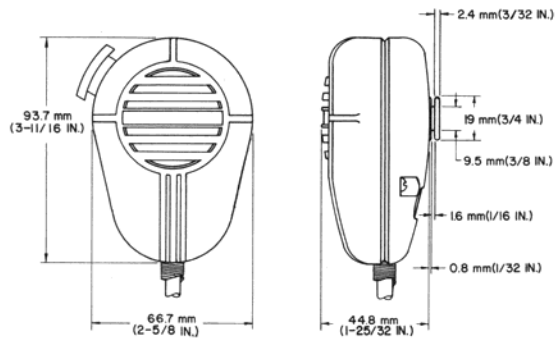
Gray high-impact Armo-Dur

## Mounting Bracket

Supplied (see Figure 1)

## Dimensions

See Figure 5



OVERALL DIMENSIONS  
**FIGURE 5**

## Net Weight

510 grams (1 lb, 2 oz)

## Shipping Weight

624 grams (1 lb, 6 oz)

## FURNISHED ACCESSORY

Mounting Bracket .....RK6MB

## REPLACEMENT PARTS

Cartridge .....R10B  
Cable .....C15C  
Case Back and Mounting Button Assembly ....90B601  
On-Off Switch .....RK8S  
Switch Button .....RK3SB

## GUARANTEE

This Shure product is guaranteed in normal use to be free from electrical and mechanical defects for a period of one year from the date of purchase. Please retain proof of purchase date. This guarantee includes all parts and labor.

## SHIPPING INSTRUCTIONS

Carefully repack the unit and return it prepaid to the factory. 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.