

### 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.

#### 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

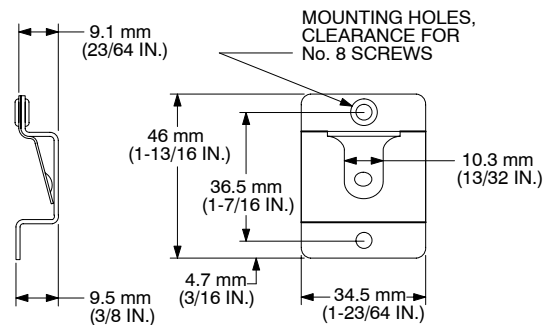
similar uses. The microphone is also suitable for voice applications in indoor and outdoor public address.

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 1048 Carbon Microphones.

#### INSTALLATION AND CONNECTIONS

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



MOUNTING BRACKET

FIGURE 1

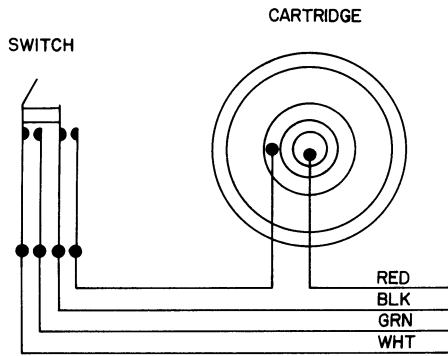
The internal switch connections of the Model 104C are shown in Figure 2. The Model 104C has a double-pole, single-throw, normally open, leaf-type switch to control the microphone and relay or switching circuits.

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:

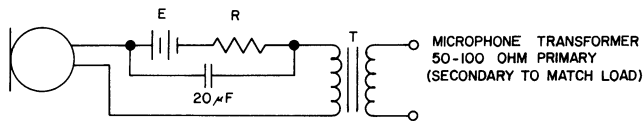
E (Volts)	Total Minimum Circuit Resistance (ohms)
4.5	50
6	100
12	200
24	500

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

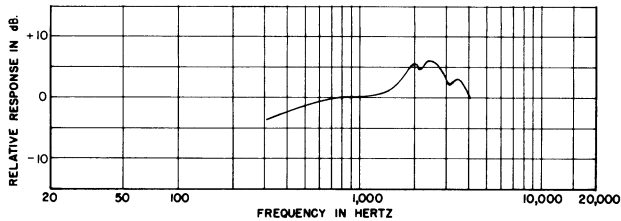
**SPECIFICATIONS**

**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**

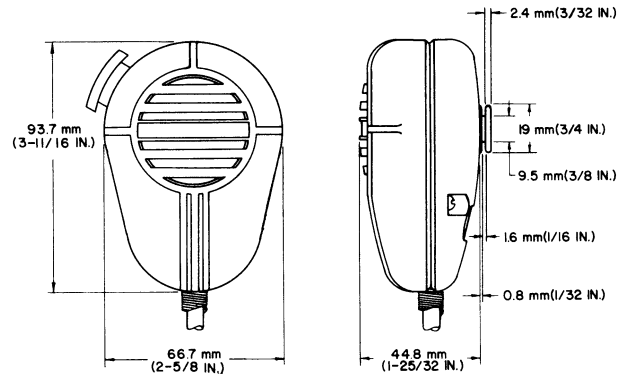
Gray high-impact ARMO-DUR®

**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 (3 in kit) ..... RK6MB

**REPLACEMENT PARTS**

Cartridge ..... R10A

Cable ..... C15C

Case Back and Mounting Button Assembly .. 90B601

Case Front ..... 65F140A

On-Off Switch ..... RK7S



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