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Shure Model 414A 414B Microphone

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MICROPHONES AND ELECTRONIC COMPONENTS

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DATA SHEET

MODELS 414A AND 414B

*Ranger<sup>2</sup>*

## CONTROLLED MAGNETIC<sup>®</sup> HAND MICROPHONES

### GENERAL

The Model 414 Series Ranger II handheld microphones are small size, CONTROLLED MAGNETIC<sup>®</sup> units resigned for clear, crisp, natural voice response of high intelligibility.

#### Microphone Features:

- Frequency response from 200 to 5,000 Hz, especially tailored for voice communications use
- Small, light and compact case, takes minimum space in portable equipment, fits comfortably and firmly in the palm of the hand
- Extremely rugged high impact ARMO-DUR<sup>®</sup> case, both lighter and stronger than die-cast metal, comfortable to the touch in hot or cold weather
- Single-throw double-pole leaf-type switch designed to stand up under rigorous operating conditions and constant usage
- Long life rubber-jacketed coil cord
- Ruggedness and dependability under all operating conditions

### APPLICATIONS

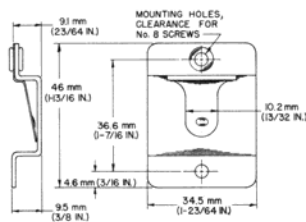
The Model 414 Series microphones are especially recommended for all types of outdoor-indoor communication activity: in mobile and fixed station use (as in police, fire, utility, forestry, and transportation services), and in commercial and industrial applications—including radiotelephone, amateur radio, and similar uses. The microphones are also suitable for indoor and outdoor public address.

Model 414A is a high-impedance microphone with high output level, making it suitable for connection to high-impedance amplifier inputs when cable lengths of 15.2m (50 ft) or less are needed.

Model 414B is a low-impedance microphone and is recommended when long cable lengths are required or under conditions where severe hum pickup may exist. The Model 414B may be connected directly to the input of a low-impedance amplifier, or a Shure Model A95 Series Line Matching Transformer may be used for coupling the Model 414B to the input of a high-impedance amplifier.

### INSTALLATION AND CONNECTIONS

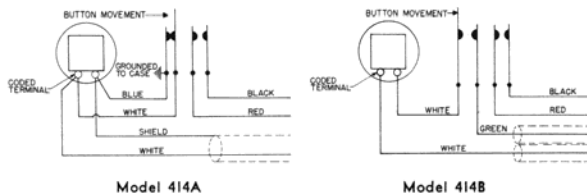
A mounting bracket for permanent installation is supplied with each microphone. (See Figure 1)



MOUNTING BRACKET  
FIGURE 1



The internal switch connections of Models 414A and 414B are shown in Figure 2.



INTERNAL CONNECTIONS  
FIGURE 2

Model 414A is a high-impedance microphone with a three-conductor coiled-cord cable (one conductor shielded) and a double-pole single-throw leaf-type switch to control the microphone circuit and an external relay or switching circuit. The WHITE lead is the "hot" conductor for connection to the microphone circuit; the shield is connected to the microphone circuit ground. The RED and BLACK leads control the relay or switching circuit.

Model 414B is a low-impedance microphone with a four-conductor coiled-cord cable (two conductors shielded) and a double-pole single-throw leaf-type switch to control the microphone circuit and an external relay or switching circuit. The GREEN and WHITE leads are the "hot" conductors for balanced-line connection to the microphone circuit; the shield is connected to the microphone circuit ground. The RED and BLACK leads control the relay or switching circuit.

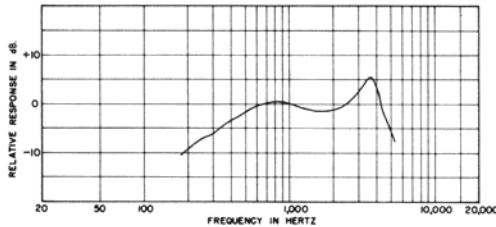
## SPECIFICATIONS

### Type

CONTROLLED MAGNETIC®

### Frequency Response

200 to 5,000 Hz (see Figure 3)



TYPICAL FREQUENCY RESPONSE  
**FIGURE 3**

### Impedance (at 1,000 Hz)

414A—Microphone impedance is "High" for connection to high-impedance microphone inputs.

414B—Microphone rating impedance is 150 ohms (200 ohms actual) for connection to microphone inputs rated at 19 to 300 ohms.

### Load Impedance Range

	Minimum	Recommended
414A	15 kilohms	100 kilohms
414B	150 ohms	1,000 ohms

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

	414A	414B
Open Circuit Voltage* . . . . .	-11.5 dB (266 mV)	-31.0 dB (28 mV)
Power Level** . . . . .		-51.0 dB

\*0 dB = 1 volt per 100 microbars  
\*\*0 dB = 1 milliwatt per 10 microbars

### Switch

Built-in double-pole single-throw leaf-type to control microphone circuit and relay circuit

### Cable

414A—1.8m (6 ft) three-conductor, one conductor shielded, attached coiled cable

414B—1.8m (6 ft) four-conductor, two conductors shielded, attached coiled cable

### Mounting Bracket

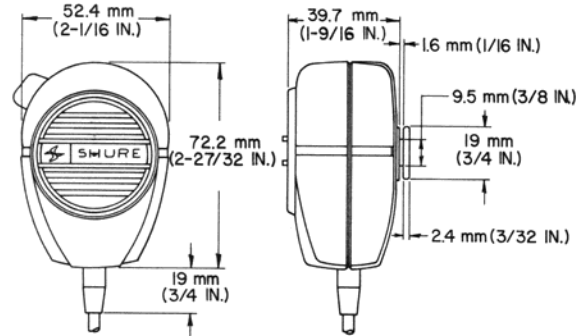
Supplied (see Figure 1)

### Case

High impact ARMO-DUR®

### Dimensions

See Figure 4



OVERALL DIMENSIONS  
**FIGURE 4**

### Net Weight

227 grams (8 oz)

### Shipping Weight

369 grams (13 oz)

### FURNISHED ACCESSORY

Mounting Bracket . . . . . RK6MB

### OPTIONAL ACCESSORY

Line Matching Transformer . . . . . A95 Series

### REPLACEMENT PARTS

	414A	414B
Cartridge . . . . .	R14A	R14B
Cable . . . . .	C24C	C25C
Case Assembly . . . . .	RK12C	RK13C
On-Off Switch . . . . .	90B1008	RK15S
Switch Button . . . . .	RK16SB	RK16SB

### IMPORTANT

Shure Microphone Cables are selected after exhaustive tests to insure superior performance in microphones because of low capacitance, superior shielding properties and unusually long life under severe use.

Cables with plastic insulation should not be subjected to excessive soldering-iron heat. Carefully clean and tin the conductors and the connections to which the conductors are to be soldered. The soldering operation can then be done with a minimum of heat, thereby avoiding any possibility of damage to the cable.

### 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.