

SHURE**MICROPHONES AND ELECTRONIC COMPONENTS**

AREA CODE 312/328-9000 • CABLE SHUREMICRO

MODELS 414A AND 414B "RANGER II"**CONTROLLED MAGNETIC HAND MICROPHONES**

General: The Model 414 Series hand microphones are small size controlled magnetic units designed for clear, crisp, natural voice response of high intelligibility.

The microphones feature—

- Frequency response from 200 to 5,000 Hz (cps), especially tailored for voice communications use
- A small, light, and compact case taking minimum space in portable equipment that fits comfortably and firmly in the palm of the hand
- Extremely rugged high impact "Armo-Dur" case—both lighter and stronger than die-cast metal cases,—comfortable to the touch in hot or cold weather
- Single throw, double pole, leaf type switch designed to stand up under severe operating conditions and constant usage.
- Ruggedness and dependability under all operating conditions
- Long life, neoprene jacketed coil cord

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; Commercial; Industrial—including radio telephone, amateur radio and similar applications. The microphones are unusually suitable for severe outdoor and indoor public address.

Because of its high impedance and high output, the Model 414A may be used in installations where only a moderate length of cable is required. The low impedance, Model 414B, is designed for use in installations where long cable lengths are required.

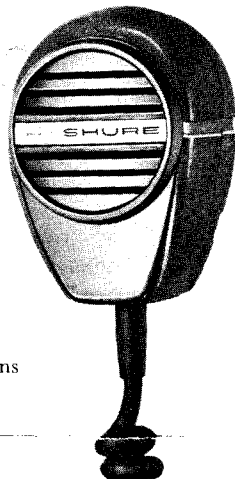
Connections: Internal switch connections of Model 414A and 414B are shown in Figure A.

Model 414A is a high impedance unit. Model 414A uses a three-conductor retractable cable (one conductor is shielded) and a double-pole, single-throw, leaf-type switch to control the microphone circuit and to control an external relay or switching circuit. Model 414A may be used with any crystal microphone amplifier or other amplifier with an input impedance of 100,000 ohms or more.

Model 414B is a low impedance unit (150-250 ohms). Model 414B uses a four-conductor retractable cable (two conductors are shielded) and a double-pole, single-throw, leaf-type switch to control the microphone circuit and to control an external relay or switching circuit. Model 414B is wired for balanced-line operation and is recommended for use where long cable lengths are required or under conditions of severe hum disturbances. Model 414B may be fed into a standard low impedance amplifier, or into an amplifier with high impedance input. In the latter case, Shure Model A95A cable-type transformer is available for coupling the low impedance line to the input of high impedance amplifiers.

Important: Shure Microphone Cables are selected after exhaustive tests to insure superior performance in microphones because of low capacities, 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.



Replacement Parts: For a complete list, write Shure Brothers, Inc. for data sheet No. 27A373.

Patent Notice: U.S. Patent D203,187

SPECIFICATIONS

Frequency Response: 200 to 5,000 Hz (cps)

Output Level:

Model 414A
 Open circuit voltage..... 14.5 db* (.188 volt)
 EIA Microphone Rating gm (Sensitivity).....144.5 db***

Model 414B
 Open circuit voltage..... 33.5 db* (.021 volt)
 Power level into 200 ohms..... 52.5 db**
 EIA Microphone Rating gm (Sensitivity).....145.0 db***

*0db = 1 volt per 100 microbars
 **0db = 1 milliwatt with 10 microbars
 ***0db = EIA Standard SE-105, August 1949
 Microbar = One dyne per square centimeter

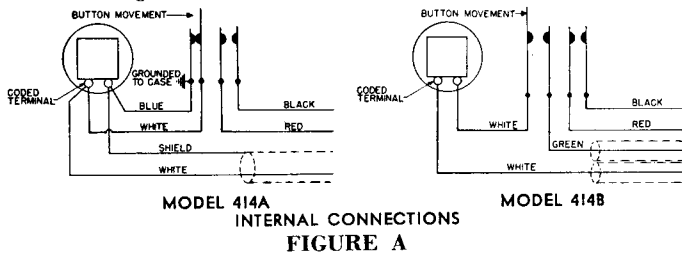
Recommended Load Impedance: Model 414A—100,000 ohms or more. Model 414B—150 to 250 ohms.

Case: High impact "Armo-Dur"

Cable: Model 414A—3-conductor, one shielded neoprene jacked coil cord. Model 414B—4-conductor, two shielded neoprene jacketed coil cord.

Switch: Single throw, double pole, leaf type

Dimensions: See Figure B



Net Weight: 8 ounces (227 grams)
Shipping Weight: 13 ounces (369 grams)
Mounting Bracket: Supplied. See Figure C

Guarantee: Each microphone is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from the factory, provided all instructions are complied with fully. In case of damage, return the microphone to the factory for repair. Our guarantee is voided if the microphone case is opened.

