Model SM10A Microphone User Guide



MODEL SM10A
DYNAMIC HEAD-WORN MICROPHONE

The Shure SM10A is a low-impedance, unidirectional dynamic microphone designed for close-talk head-worn applications such as remote-site sports broadcasting and corporate intercom systems. It is also ideal for singing drummers, keyboard artists, and other performers who need a head-worn vocal microphone with superior noise rejection and a smooth, natural-sounding frequency response.

The SM10A is very lightweight and is typically mounted on the supplied steel headband assembly. An adjustable pivot on the headband assembly allows the microphone boom to be moved 20° in any direction. The boom also slides out so the microphone can be positioned up to 89 mm (3 1/2 in.) from the pivot housing. A supplied windscreen reduces wind noise and explosive breath sounds. A belt clip that fits over the XLR connector and attaches to the user's belt or waistband provides cable strain relief.

Features

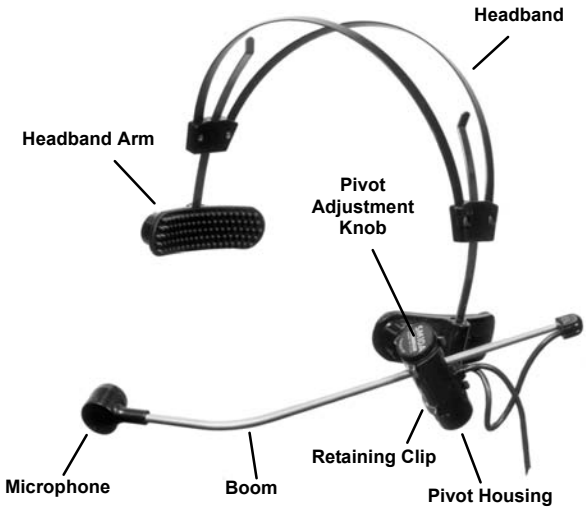
- *Designed for close-talk operation; ideal for use in noisy environments*
- *Unidirectional (cardioid) polar pattern for superior rejection of unwanted sound*
- *Smooth, natural-sounding frequency response*
- *Adjustable microphone boom with locking pivot can be moved 20° in any direction and extends to 89 mm (3 1/2 in.)*
- *Light weight headband minimizes user fatigue and does not interfere with eyeglasses*
- *Rugged stainless steel, aluminum and high-impact plastic construction*
- *A clip that fits over the XLR connector and attaches to the user's belt or waistband, providing cable strain relief.*

MOUNTING THE SM10A ON THE HEADBAND

1. Twist the lower headband arms 90° so they are perpendicular to the headband. As supplied, the retaining clip is positioned for left side operation. See Figure 1.

   NOTE: For right side usage (see photo), remove the retaining clip and attach it to the other (unused) hole in the headband arm so the screw is at the top.
2. Snap the microphone pivot housing into the retaining clip with the pivot adjustment knob upward and the microphone toward the front.
3. Loosen the pivot adjustment knob and position the boom so that the microphone is near the side of the user's mouth. Then tighten the pivot adjustment knob.
4. Place the assembled microphone on the user's head and pull the headband arms downward until they are just above the ears.
5. Loosen the pivot adjustment knob and position the microphone as close as possible to the corner of the user's mouth. Then tighten the adjustment knob.

   NOTE: For proper operation, the microphone should be less than 25 mm (1 in.) from the corner of the mouth–away from the center of the mouth. This will eliminate explosive breath sounds (“pop”).
6. Snap the belt clip over the groove in the XLR connector at the end of the microphone wire. Then attach the clip to the user's belt or waistband.
7. Plug the microphone XLR connector into a microphone cable or preamplifier.



SM10A POSITIONED FOR LEFT SIDE OPERATION
FIGURE 1

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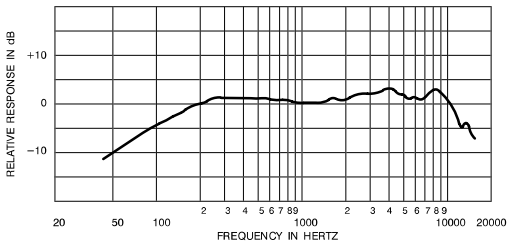
SPECIFICATIONS

Type

Dynamic, close-talk

Frequency Response (at 8 mm [5/16 in.])

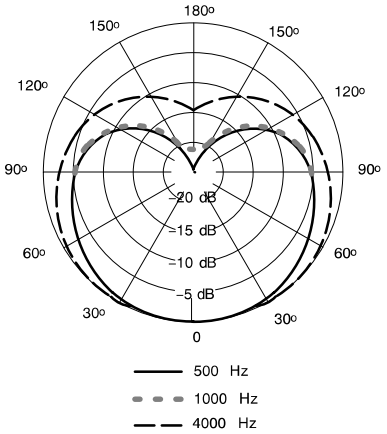
50 to 15,000 Hz (see Figure 2)



TYPICAL FREQUENCY RESPONSE
FIGURE 2

Polar Pattern

Cardioid, uniform with frequency, symmetrical about axis (see Figure 3)



TYPICAL POLAR PATTERN
FIGURE 3

Impedance

Rated at 150 Ω (223 Ω actual)

Sensitivity (1,000 Hz at 8 mm (5/16 in.)

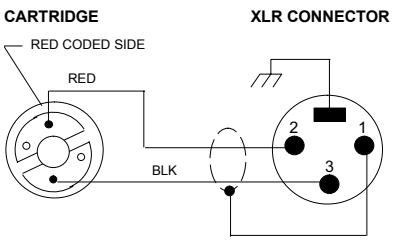
Open Circuit Voltage: –65.0 dBV/Pa* (0.45 mV)
*1 Pa = 94 dB SPL

Hum Sensitivity (typical)

35.5 dB equivalent SPL in a 1 mOe field

Polarity

Positive pressure on diaphragm produces positive voltage on pin 2 of microphone connector. See Figure 4.



SM10A WIRING DIAGRAM
FIGURE 4

Connector

Professional three-pin male XLR audio connector.

Cable

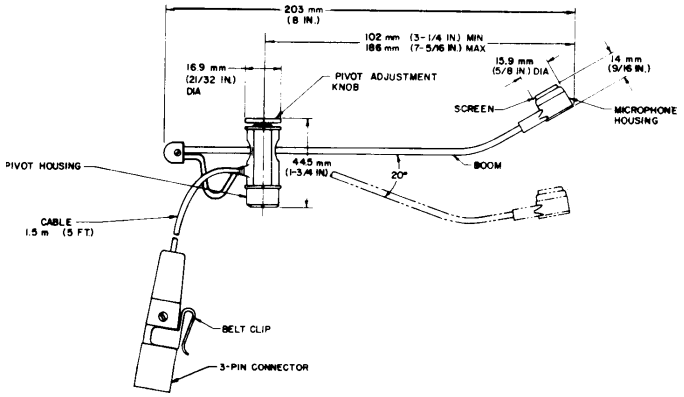
Non-detachable, 1.5 m (5 ft), two-conductor, shielded, plastic-jacketed

Case

Black thermoplastic microphone and pivot housing, anodized aluminum end caps, stainless steel grille, and boom

Dimensions

See Figure 5



SM10A AND HEADBAND ASSEMBLY DIMENSIONS
FIGURE 5

Net Weight

78 grams (2.7 ounces) less cable and connector

Packaged Weight

950 grams (2 lbs., 1 1/2 oz)

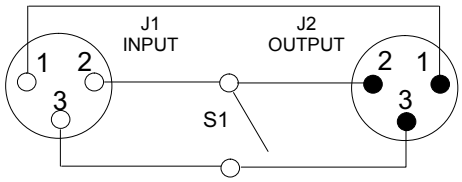
Certification

Eligible to bear CE Marking. Conforms to European EMC Directive 89/336/EEC. Meets applicable tests and performance criteria in European Standard EN55103 (1996) parts 1 and 2, for residential (E1) and light industrial (E2) environments.

ON-OFF SWITCH MODIFICATION

As supplied, the SM10A does not include an on-off switch. However, one can be easily constructed using a Switchcraft T3F 3-pin female professional audio connector, or equivalent, with an integral switch. This connector can be attached to the cable connecting the SM10A to the PA system. Refer to the wiring diagram in Figure 6.

NOTE: In order for the switch to be silent, phantom power must not be active on this input channel.



ON-OFF SWITCH WIRING DIAGRAM
FIGURE 6

Reference Designator	Part Description
J1	3-Pin female audio connector, chassis mount
J2	3-Pin male audio connector, chassis mount
S1	Miniature toggle switch, SPST

ARCHITECTS' SPECIFICATIONS

The microphone shall be a Shure Model SM10A or equivalent. The microphone shall be a moving-coil (dynamic) type with a frequency response of 50 to 15,000 Hz. The unit shall have a cardioid polar characteristic. The cancellation at the rear shall be 15 to 20 dB. The microphone shall be low impedance with a rated impedance of 150 ohms for connection to microphone inputs rated at 19 to 300 ohms. The microphone output shall be -65.0 dB where 0 dB = 1 volt per 10 microbars. The microphone shall be a head-worn type, and shall be provided with a 1.5 m (5 ft), non-detachable, two-conductor, shielded cable with a professional, three-pin, audio connector designed to mate with Cannon XL series, Switchcraft A3 (Q.G.) series or equivalent connectors. The microphone shall also be provided with a headband, connector belt clip, and foam windscreen. The overall dimensions of the microphone shall be 203 mm (8 in.) in length and 44.5 mm (1-3/4 in.) in maximum height (pivot housing). The microphone housing shall be 15.9 mm (5/8 in.) in diameter and 14 mm (9/16 in). in height.

SUPPLIED ACCESSORIES AND REPLACEMENT PARTS

The following furnished accessories and replacement parts may be ordered through your Authorized Shure Dealer or directly from Shure Incorporated.

Connector Belt Clip RK200BC
Windscreen RK184WS
Microphone Cartridge R93
Headband Assembly 90A3997
Retaining Clip 53A1801A