



# MX392 MX393

## Boundary Microphones

The Shure small, surface-mounted electret condenser microphone series, MX392-393, user guide.  
Version: 4 (2019-J)

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# MX392 MX393 Boundary Microphones

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## General Description

Shure Microflex<sup>®</sup> MX300 Series microphones are surface-mounted electret condenser microphones designed primarily for mounting on conference tables, stage floors, and lecterns. Their high sensitivity and wide frequency range make them especially suitable for picking up speech and vocals in sound reinforcement and recording applications. Interchangeable cartridges provide the installer with greater flexibility and make it possible to easily reconfigure microphone coverage as the need arises. The MX392 and MX393 models include an internal preamplifier.

MX300 Series microphones take advantage of the principle that, at a barrier or boundary, the sound pressure level doubles. When placed near a sufficiently large boundary surface, the microphone has 6 dB higher sensitivity and approximately 3 dB greater direct-to-reverberant sound ratio.

## Features

The MX392, MX392BE, and MX393 feature programmable logic input and output. Additionally they provide following benefits:

- Flat frequency response across the vocal range for uncolored sound
- Interchangeable cartridges that provide a choice of polar pattern for each application
- Sleek, low-profile design for surface mounting
- Programmable mute button
- LED indicator
- Logic input/output for remote control or use with automatic mixers
- RF filtering

## Model Variations

The polar pattern of the included cartridge is indicated by a model number suffix:

**/C** Cardioid

**/S** Supercardioid

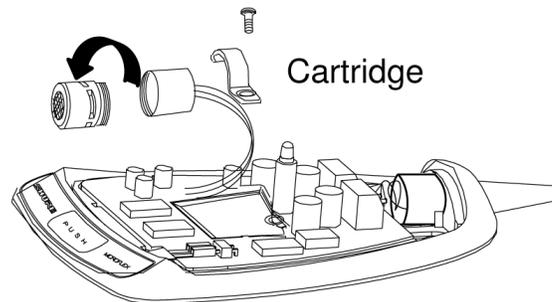
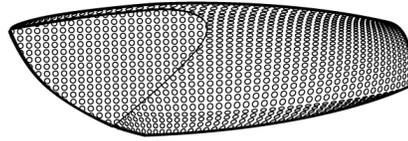
**/O** Omnidirectional

**/N** Cartridge not included

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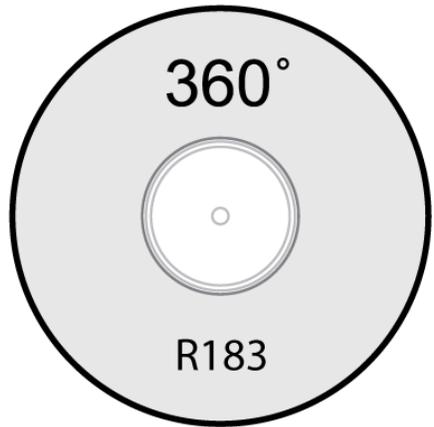
# Interchangeable Cartridges

Remove Grille

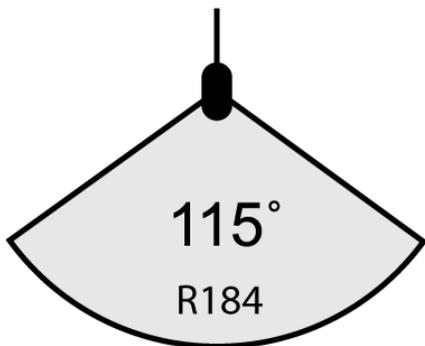


Remove Bracket

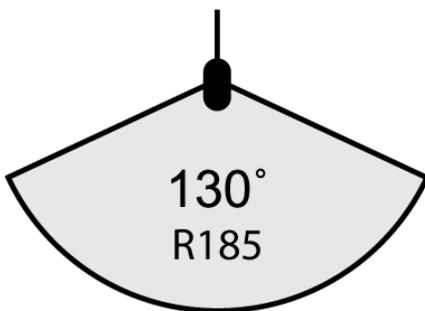
Microflex microphones use interchangeable cartridges that allow you to choose the polar pattern for different installations.



Omnidirectional



Supercardioid



Cardioid

Cartridge Polar Patterns

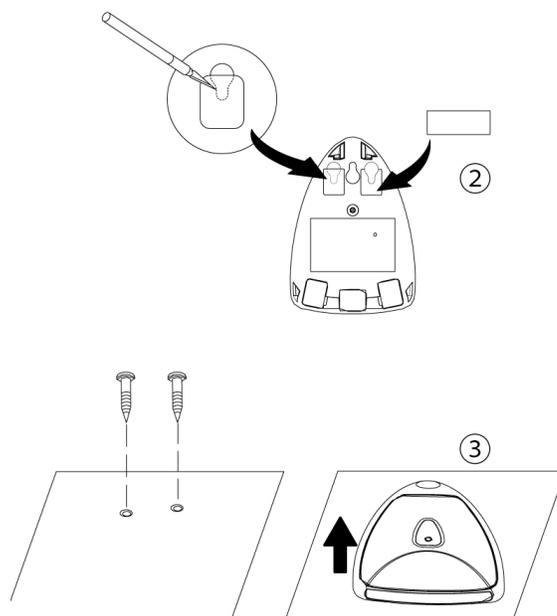
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## Permanent Installation

### MX392 and MX393

1. Remove grille to access mounting key holes.
2. Cut slots into pads.
3. Slide microphone forward to engage screws in slots.

**Note:** If using rear side-exit cable option, only drill two outer holes.



## Microphone Placement

For best low-frequency response and rejection of background noise, place the microphone on a large, flat surface, such as a floor, table, or lectern.

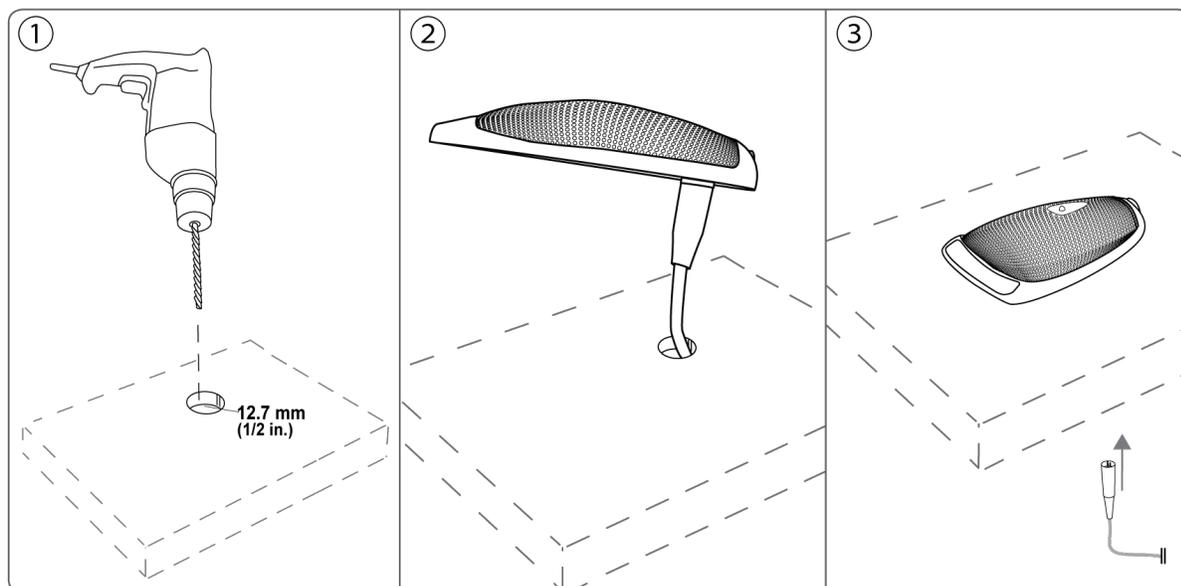
To reduce reverberance, avoid reflective surfaces above or to the side of the microphone, such as beveled sides of pulpits or overhanging shelves.

## MX392BE

Once placement has been determined, the microphones can be permanently installed. First, drill the hole in the selected area to allow the bottom entry cable to be conveniently routed out of sight. Then use the pressure sensitive adhesive to keep the microphone firmly in place.

### Drilling the hole:

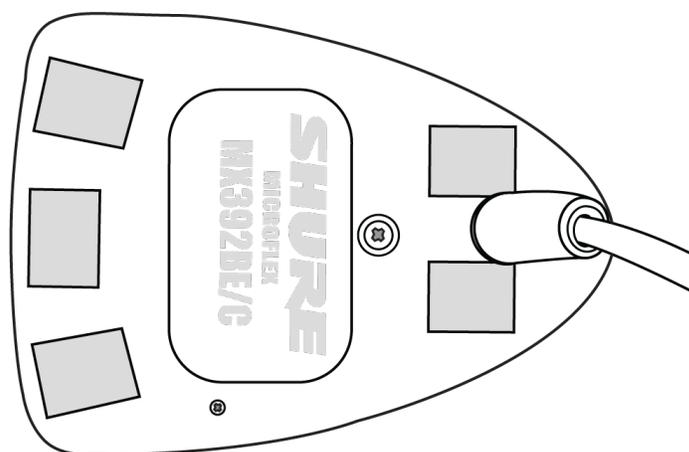
1. Determine the cutting area for the bottom exit cable and drill a 1/2" (12.7 mm) circular hole. Remove all debris from the mounting surface.
2. Route the cable through the drilled hole.
3. Connect the cable to a mixer or P.A. system.



## Pressure Sensitive Adhesive

1. Thoroughly clean the application area with the included alcohol wipe. Removing the dust will allow the microphone to adhere well.
2. Remove the adhesive backing and gently set the microphone into position.
3. Once the microphone is in position, firmly apply pressure to the microphone.

**Note:** The pressure sensitive adhesive will be extremely difficult to move once pressure has been applied.



Bottom view of MX392BE/C with adhesive pads

## Re-Routing Cable for Bottom Exit (If your MX392 is not BE configured)

1. Remove the grille.
2. Disconnect wires from screw terminals.
3. Grasp rubber boot within 1/2" of housing, using gas pliers. Rotate boot and cable ccw to remove connector from threaded "L" bracket.

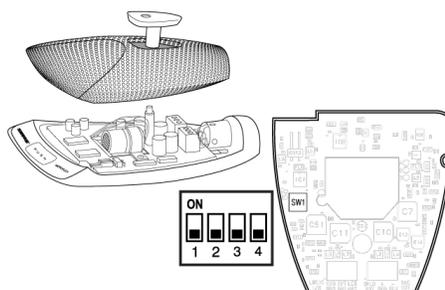
4. Remove cable from microphone housing.
5. Insert cable through access hole in microphone base.
6. Insert cable connector through hole and thread it into "L" bracket.
7. If desired, rubber strain relief can be reattached to cable end or removed from cable before fastening it to bracket.
8. Re-connect wires to proper screw terminals on circuit board.
9. Insert supplied round rubber plug into unused side cable exit.
10. Reinstall grille and foam screen.
11. Insert cable through hole in mounting surface. Secure microphone to mounting surface.

## Configuration

### DIP Switches

Use the DIP switches to configure logic settings and mute button behavior.

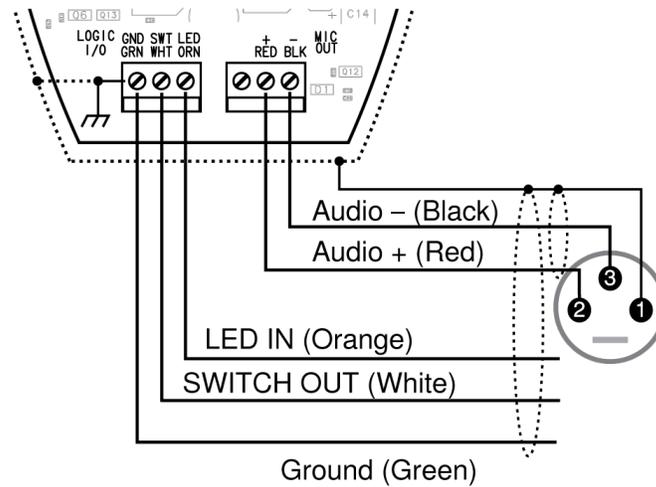
The DIP switches are covered with a piece of clear tape at the factory. Remove tape to modify the switch settings.



	OFF (factory default)	ON
1	Momentary	Toggle
2	Push-to-mute	Push-to-talk
3	Mute button enabled, LED illuminates when mic is active	Disable mute button (microphone always on), logic controls LED
4	--	--

## Wiring Diagram

**NOTE:** Audio and logic ground are connected at microphone base.

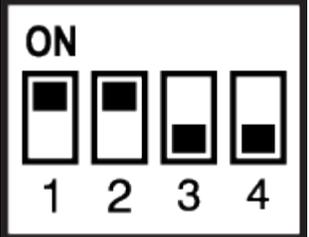


## Mute Button Configuration

Use DIP switches 1 and 2 to configure the mute button, as follows.

Be sure to set DIP switch 3 **off** (factory default) so that the mute button controls audio from the microphone.

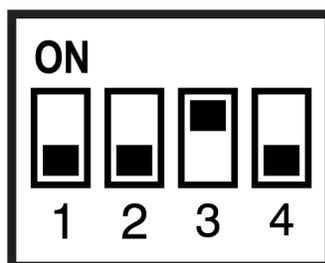
Switch Function	DIP Switch Setting
Momentary: push-to-mute (as shipped).	
Momentary: push-to-talk	
Toggle: (Push On/Push Off): Mic is active when powered on	

Switch Function	DIP Switch Setting
Toggle: (Push On/Push Off): Mic is mute when powered on	

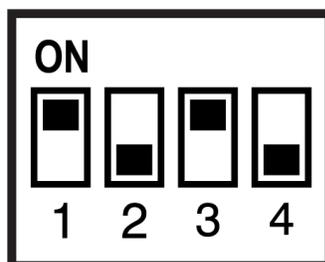
## Connecting to an Automatic Mixer

Use these settings if connecting the microphone to an automatic mixer or other device that mutes audio and controls the LED.

1. Connect logic leads to the automatic mixer. Connect the LED IN to the gate output to illuminate the LED when that channel is gated on.
2. Set DIP switch 3 on. This disables the mute button (the microphone passes audio regardless of whether the button is pressed or not).
3. Set DIP switch 1 to configure how the mute button sends SWITCH OUT logic:



Momentary: push = 0 Vdc, release = 5 Vdc



Toggle: initial = 5 Vdc, push = 0 Vdc

## Logic Wiring

**Green (LOGIC GROUND):** Connects to the logic ground of an automatic mixer, switcher, or other equipment.

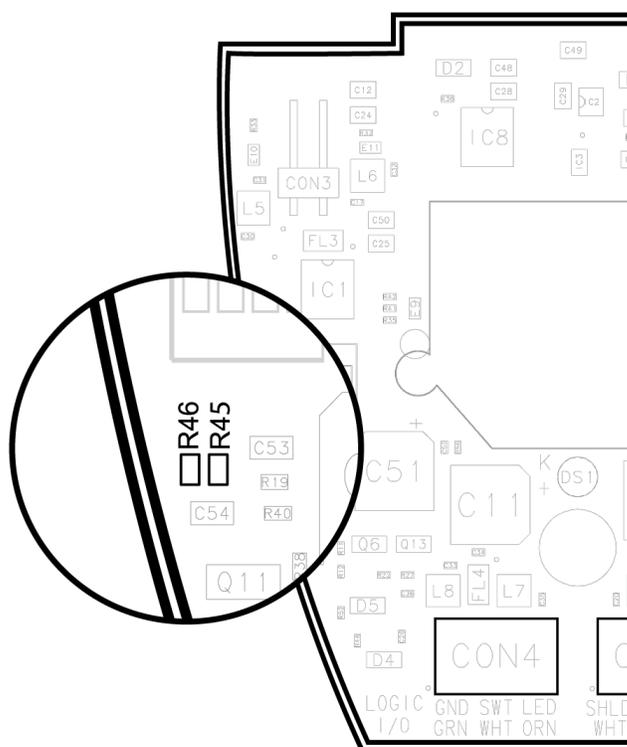
**Orange (LED IN):** Set DIP switch 3 on to use LED IN. When shorted to LOGIC GROUND, the LED turns on.

**White (SWITCH OUT):** Provides TTL logic (0 Vdc or 5 Vdc) in response to the mute button. Set DIP switch 1 for momentary or toggle. When phantom power is applied, logic initializes high (5 Vdc). DIP switch 2 has no effect on SWITCH OUT.

## Changing SWITCH OUT to Always Momentary

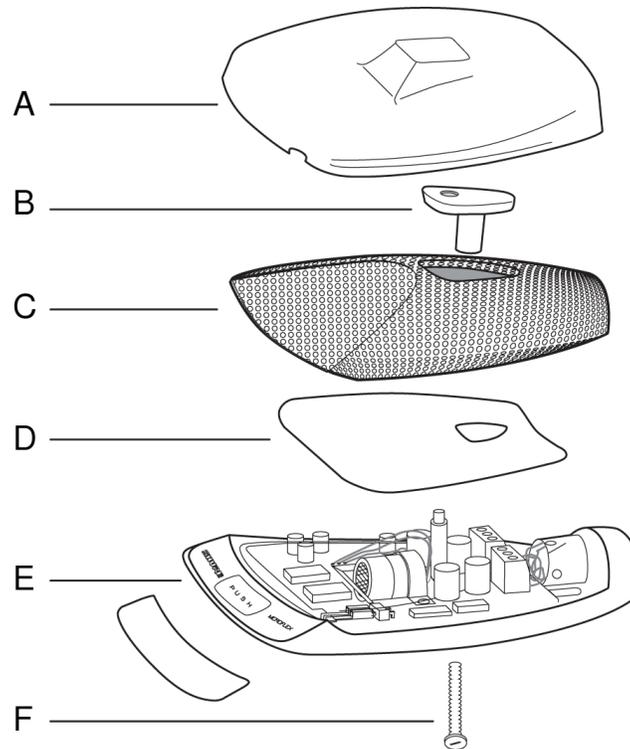
Use the following modification in situations where your logic interface requires momentary closure of the SWITCH OUT, but you want the mute button to toggle the microphone (DIP switch 1 ON, 3 OFF):

1. Access the circuit board inside the microphone base.
2. Remove the resistor at R45 and reinstall it at location R46.



## Painting

- A supplied plastic paint shield
- B retainer
- C grille
- D foam screen
- E supplied adhesive masking strip
- F supplied rubber plug



1. Remove foam screen from grille before painting
2. Clean surfaces to be painted with denatured alcohol or naphtha.
3. To avoid filling grille holes, apply paint in thin layers.
4. **Important:** Use fine sandpaper to remove paint from the bottom edges of the grille. This ensures electrical continuity for proper shielding.

## Specifications

*All measurements taken with microphone mounted on a wooden surface (76 x 76 cm)*

### Type

Electret Condenser

### Frequency Response

50–17000 Hz

### Polar Pattern

MX392/C, MX392BE/C, MX393/C	Cardioid
MX392/S, MX392BE/S, MX393/S	Supercardioid
MX392/O, MX392BE/O, MX393/O	Omnidirectional

**Output Impedance**180  $\Omega$ **Output Configuration**

Active Balanced

**Sensitivity**

@ 1 kHz, open circuit voltage

<b>Cardioid</b>	-30 dBV/Pa
<b>Supercardioid</b>	-28 dBV/Pa
<b>Omnidirectional</b>	-22 dBV/Pa

1 Pa=94 dB SPL

**Maximum SPL**1 kHz at 1% THD, 1 k $\Omega$  load

<b>Cardioid</b>	119 dB
<b>Supercardioid</b>	118 dB
<b>Omnidirectional</b>	111 dB

**Self Noise**

A-weighted

<b>Cardioid</b>	23 dB SPL
<b>Supercardioid</b>	21 dB SPL
<b>Omnidirectional</b>	15 dB SPL

**Signal-to-Noise Ratio**

Ref. 94 dB SPL at 1 kHz

<b>Cardioid</b>	71 dB
<b>Supercardioid</b>	73 dB
<b>Omnidirectional</b>	80 dB

**Dynamic Range**1 k $\Omega$  load, @ 1 kHz

96 dB

**Common Mode Rejection**

10 Hz to 100 kHz

45 dB, minimum

**Clipping Level**

at 1% THD

-6 dBV (0.5 V)

## Polarity

Positive sound pressure on diaphragm produces positive voltage on pin 2 relative to pin 3 of output XLR connector

## Mute Switch

50–20000 Hz

–50 dB minimum

## Logic Connections

<b>LED IN</b>	Active low ( $\leq 1.0V$ ), TTL compatible. Absolute maximum voltage: $-0.7V$ to $50V$ .
<b>LOGIC-OUT</b>	Active low ( $\leq 0.5V$ ), sinks up to $20mA$ , TTL compatible. Absolute maximum voltage: $-0.7V$ to $24V$ (up to $50V$ through $3k\Omega$ ).

## Cable

<b>MX392</b>	$3\frac{1}{2}$ m (12 ft) attached cable with shielded audio pair and three conductors for logic control, unterminated
<b>MX392BE</b>	$3\frac{1}{2}$ m (12 ft) attached cable with shielded audio pair and three conductors for logic control, unterminated, bottom exit
<b>MX393</b>	$3\frac{1}{2}$ m (12 ft) detachable cable with 3-pin audio connector

## Weight

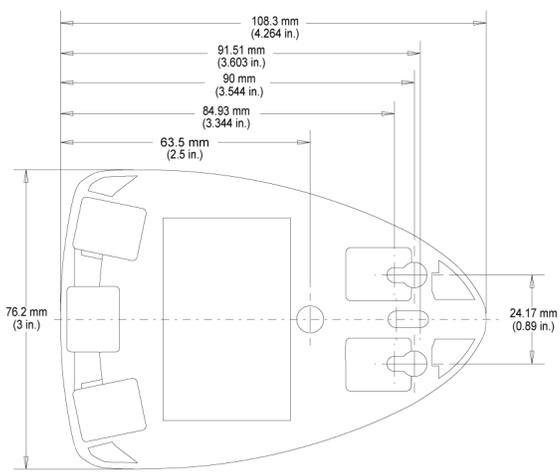
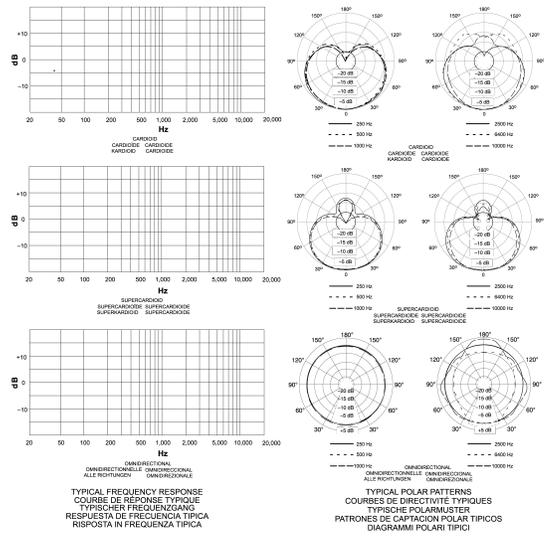
172 g (0.38 lbs)

## Environmental Conditions

<b>Operating Temperature</b>	$-18-57$ °C( $0-135$ °F)
<b>Storage Temperature</b>	$-29-74$ °C( $-20-165$ °F)
<b>Relative Humidity</b>	0-95%

## Power Requirements

11-52V DC , 2.0 mA



## Furnished Accessories

<b>Paint Mask</b>	80C514
<b>Switch Paint Mask</b>	80A541
<b>Set of 5 rubber pads with adhesive</b>	RPM470

## Certifications

Meets essential requirements of all applicable European Directives.

Eligible for CE marking.

The CE Declaration of Conformity can be obtained from Shure Incorporated or any of its European representatives. For contact information please visit [www.shure.com](http://www.shure.com)

The CE Declaration of Conformity can be obtained from: [www.shure.com/europe/compliance](http://www.shure.com/europe/compliance)

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