Shure Microflex® 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

MX392: Attached, unterminated cable. MX392BE: Attached, unterminated cable configured at the factory for bottom exit. MX393: Detachable cable with XLR output connector.

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

/C Cardioid
/S Supercardioid
/O Omnidirectional
/N Cartridge not included

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 integrated XLR 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.

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.

**Note:** Bottom cover must be closed for microphone to function.

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**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.

<table>
<thead>
<tr>
<th>Switch Function</th>
<th>DIP Switch Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Momentary: push-to-mute (as shipped)</td>
<td>ON 1 2 3 4</td>
</tr>
<tr>
<td>Momentary: push-to-talk</td>
<td>ON 1 2 3 4</td>
</tr>
<tr>
<td>Toggle: (Push On/Push Off): Mic is active when powered on</td>
<td>ON 1 2 3 4</td>
</tr>
<tr>
<td>Toggle: (Push On/Push Off): Mic is mute when powered on</td>
<td>ON 1 2 3 4</td>
</tr>
</tbody>
</table>

**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 (MX392)**

- **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.

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**Wiring Diagram**

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

**Cartridge Type**
Electret Condenser

**Frequency Response**
50–17000 Hz

**Polar Pattern**

<table>
<thead>
<tr>
<th>Type</th>
<th>Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>MX392/C, MX392BE/C, MX393/C</td>
<td>Cardioid</td>
</tr>
<tr>
<td>MX392/S, MX392BE/S, MX393/S</td>
<td>Supercardioid</td>
</tr>
<tr>
<td>MX392/O, MX392BE/O, MX393/O</td>
<td>Omnidirectional</td>
</tr>
</tbody>
</table>

**Output Impedance**
180 Ω

**Output Configuration**
Active Balanced

**Sensitivity**
@ 1 kHz, open circuit voltage

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardioid</td>
<td>–30 dBV/Pa</td>
</tr>
<tr>
<td>Supercardioid</td>
<td>–28 dBV/Pa</td>
</tr>
<tr>
<td>Omnidirectional</td>
<td>–22 dBV/Pa</td>
</tr>
</tbody>
</table>

1 Pa=94 dB SPL

**Maximum SPL**
1 kHz at 1% THD, 1 kΩ load

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Maximum SPL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardioid</td>
<td>119 dB</td>
</tr>
<tr>
<td>Supercardioid</td>
<td>118 dB</td>
</tr>
<tr>
<td>Omnidirectional</td>
<td>111 dB</td>
</tr>
</tbody>
</table>

**Equivalent Output Noise**
A-weighted

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Equivalent Noise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardioid</td>
<td>23 dB SPL</td>
</tr>
<tr>
<td>Supercardioid</td>
<td>21 dB SPL</td>
</tr>
<tr>
<td>Omnidirectional</td>
<td>15 dB SPL</td>
</tr>
</tbody>
</table>

**Signal-to-Noise Ratio**
Ref. 94 dB SPL at 1 kHz

<table>
<thead>
<tr>
<th>Pattern</th>
<th>SNR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardioid</td>
<td>71 dB</td>
</tr>
<tr>
<td>Supercardioid</td>
<td>73 dB</td>
</tr>
<tr>
<td>Omnidirectional</td>
<td>80 dB</td>
</tr>
</tbody>
</table>

**Dynamic Range**
1 kΩ load, @ 1 kHz
96 dB

**Common Mode Rejection**
10 Hz to 100 kHz
45 dB, minimum

**Preamplifier Output 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 (MX392)**

<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED IN</td>
<td>Active low (≤1.0V), TTL compatible. Absolute maximum voltage: -0.7V to 50V.</td>
</tr>
<tr>
<td>LOGIC-OUT</td>
<td>Active low (≤0.5V), sinks up to 20mA, TTL compatible. Absolute maximum voltage: -0.7V to 24V (up to 50V through 3kΩ).</td>
</tr>
</tbody>
</table>

**Cable**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MX392</td>
<td>3½ m (12 ft) attached cable with shielded audio pair and three conductors for logic control, unterminated</td>
</tr>
<tr>
<td>MX392BE</td>
<td>3½ m (12 ft) attached cable with shielded audio pair and three conductors for logic control, unterminated, bottom exit</td>
</tr>
<tr>
<td>MX393</td>
<td>3½ m (12 ft) detachable cable with 3-pin audio connector</td>
</tr>
</tbody>
</table>

**Net Weight**
172 g (0.38 lbs)

**Environmental Conditions**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>–18–57°C (0–135°F)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>–29–74°C (–20–165°F)</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>0–95%</td>
</tr>
</tbody>
</table>

**Power Requirements**
11–52 V DC, 2.0 mA
Accessories

Furnished Accessories

<table>
<thead>
<tr>
<th>Paint Mask</th>
<th>80C514</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch Paint Mask</td>
<td>80A541</td>
</tr>
<tr>
<td>Set of 5 rubber pads with adhesive (MX392BE)</td>
<td>RPM470</td>
</tr>
</tbody>
</table>

Replacement Parts

<table>
<thead>
<tr>
<th>Black or White Omnidirectional Cartridge for all MX-(Microflex®) Models and WL183</th>
<th>R183B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black or White Cardioid Cartridge for WL185 and all MX-(Microflex®) Models</td>
<td>R185B</td>
</tr>
<tr>
<td>12’ Cable, 3-Pin Mini Connector (TA3F) to Male XLR, Used with MX393</td>
<td>C129</td>
</tr>
<tr>
<td>Custom Logic Cable (specify length)</td>
<td>95B2509</td>
</tr>
<tr>
<td>12’ Cable (5-Conductor, 2 Shielded) with threaded adapter on microphone end to bare end for MX392</td>
<td>C130</td>
</tr>
</tbody>
</table>

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

The CE Declaration of Conformity can be obtained from: www.shure.com/europe/compliance

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