GENERAL

The Shure Model M68P is a five-channel, completely transistorized, portable microphone mixer for use with sound reinforcement, tape recording and audio-visual systems.

The Mixer features:

- A high-impedance (unbalanced) microphone level output.
- Four microphone inputs for high-impedance (unbalanced) microphones.
- One high-level auxiliary input suitable for tape, tuner, and accessories such as the A68P Phono Preamplifier.
- Individual volume controls to balance each of the five inputs.
- A master volume control to simultaneously control level of all inputs.
- A low-impedance (balanced or unbalanced) microphone level output.
- A high-impedance, high-level auxiliary output.
- A dc power supply jack. This jack supplies 28 volts dc for use with accessories such as the Model A68P Phono Preamplifier or M62V Level-Loc or it may be used as power input in connection with the Model A67B Battery Power Supply (Accessory).
- A facility for connecting two or more mixers together to obtain additional microphone inputs. For example, two mixers connected together will give a total of eight microphone inputs and one auxiliary input.
- Listing by Underwriters' Laboratories Inc. and listing by Canadian Standards Association as certified.

SPECIFICATIONS

Gain
At 1,000 Hz

<table>
<thead>
<tr>
<th>INPUT</th>
<th>LOW IMPS. MIC.</th>
<th>HIGH IMPS. MIC.</th>
<th>HIGH IMPS. AUX.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MICROPHONE</td>
<td>5 mV produces</td>
<td>-16 dB</td>
<td>-8 dB</td>
</tr>
<tr>
<td>AUXILIARY</td>
<td>50 mV produces</td>
<td>-38 dB</td>
<td>-14 dB</td>
</tr>
</tbody>
</table>

Frequency Response
Flat within ±3 dB from 40 Hz to 20,000 Hz

Hum and Noise
70 dB below rated output (Aux. Output)

Equivalent Input Noise
33 kilohm source, 103 dB below 1 volt

Impedance

<table>
<thead>
<tr>
<th>INPUT</th>
<th>DESIGNED FOR USE WITH</th>
<th>ACTUAL IMPEDANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MICROPHONE</td>
<td>Unbalanced 10 to 50 kilohm microphones</td>
<td>60 kilohms</td>
</tr>
<tr>
<td>AUXILIARY</td>
<td>100 ohm to 10 kilohm unbalanced high-level sources</td>
<td>40-70 kilohms*</td>
</tr>
</tbody>
</table>

D.C. Operation
28 volts dc ±20%, 5 mA

Dimensions
See Figure A

Net Weight
1.25 kg (2% lb)

INSTALLATION

Connection Between Mixer and Components
For balanced-line microphone level output connection, use two-conductor, low capacity shielded cable. For unbalanced (high-impedance) microphone level or auxiliary high-level output connection, use single-conductor, low capacity shielded cable.
Grounding
If there should be objectionable hum, connect the metal chassis of the mixer to a good ground such as a metal frame of a wall outlet or a water or steam pipe. This is normally accomplished automatically through the ground wire of the power cord.

INPUT CONNECTIONS
Microphones: A maximum of four high-impedance dynamic, ribbon, or condenser microphones may be connected to the standard ¼" phone jacks marked MIC. 1, MIC. 2, MIC. 3, MIC. 4. The microphone inputs may be converted for use with low-impedance microphones by utilizing accessory plug-in transformers Model A95 Series. The unit is not recommended for use with crystal or ceramic microphones.

NOTE: Some condenser microphones produce very high output signals which may overload the input of a mixer.

Auxiliary: The phone jack on the rear of the panel marked AUX. INPUT will accept output from a high-impedance, high-level source such as a tape recorder, AM-FM tuner, or output from the Model A68P Phono Preamplifier (accessory). The Model A68M Microphone Preamplifier (accessory) may be connected to this jack to provide a fifth microphone input.

OUTPUT CONNECTIONS
Low Impedance Microphone: The receptacle marked LO IMP. MIC. OUTPUT is a low-impedance microphone level output. This output is the “mixed” output of all the input sources and is designed to work into a 25 to 600-ohm microphone line or into a low-impedance amplifier or tape recorder microphone input. The receptacle is a professional three-pin audio connector (male).† See Figure B for output receptacle connections.

High Impedance Microphone: The phone jack marked HI IMP. MIC. OUTPUT is a high-impedance high-level output designed primarily to feed a power amplifier requiring 0.5 to 2 volts or the auxiliary or tuner input to an amplifier or tape recorder. This output will also drive the input of the Model M63 Audio Master.

NOTE: The high- and low-impedance microphone outputs may be used simultaneously.

Auxiliary: The phone jack marked AUX. OUTPUT is a high-impedance high-level output designed primarily to feed a power amplifier requiring 0.5 to 2 volts or the auxiliary or tuner input to an amplifier or tape recorder. This output will also drive the input of the Model M63 Audio Master.

CONNECTING TWO UNITS TOGETHER
Two M68P Mixers may be combined to give a total of eight microphone channels plus an auxiliary input.

A. Connect the AUX. OUTPUT of Unit 1 to the AUX. INPUT of Unit 2.
B. Connect microphones to mixers and set each microphone input control to #0 position.
C. Take the output signal for recorder or P.A. amplifier from the appropriate output jack on Unit 2.
D. Set MASTER control on Unit 1 to position #4.
E. Set AUX. control on Unit 2 to position #10.
F. The MASTER control on Unit 2 is now the MASTER for all inputs.
G. Advance MASTER control (Unit 2) to about #5 position and adjust individual microphone controls for proper level. If overall gain is too low or too high, the MASTER control (Unit 2) may be adjusted.
H. If an input to the auxiliary channel is needed, such as for a tape recorder or tuner, use AUX. INPUT on Unit 1. Use AUX. control on Unit 1 for level adjustment of the auxiliary source. The master gain control for the entire system is the MASTER control on Unit 2.

The Model A68S Stacking Kit includes stacking brackets for attaching the two mixers firmly together plus the required inter-connecting cable. The cable only, is available separately under the Model A68SC.

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.

OPTIONAL ACCESSORIES
Battery Power Supply ............ Model A67B
Output Cable Kit ............... Model A67C
Locking Panel ..................... Model A68L
Phono Preamplifier Model A68P
Locking Panel Kit ............... Model A68P
Stacking Kit ...................... Model A68S
Interconnecting Cable ........... Model A68SC
Attaché Case ..................... Model AC60
Handle/Tilt Stand ............... Model A67H
Line Matching Transformer ...... Model A95 Series
Microphone Preamplifier ....... Model A68M
<table>
<thead>
<tr>
<th>ITEM</th>
<th>SHURE PART NUMBER</th>
<th>QTY IN RKC KIT</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>DI, D2</td>
<td>RKC21</td>
<td>4</td>
<td>DIODE, SILICON, IN4002 OR EQUIVALENT</td>
</tr>
<tr>
<td>Q1-Q6</td>
<td>RKC9</td>
<td>4</td>
<td>NPN TRANSISTOR, SILICON, SELECTED HIGH GAIN, LOW NOISE, SIMILAR TO 2N5088</td>
</tr>
<tr>
<td>R3, R32</td>
<td>46A011</td>
<td>1</td>
<td>POTENTIOMETER, 50K</td>
</tr>
<tr>
<td>R24-R27</td>
<td>46A010</td>
<td>1</td>
<td>POTENTIOMETER, 20K</td>
</tr>
<tr>
<td>S6</td>
<td>55B103</td>
<td>1</td>
<td>SWITCH, SLIDE, DPDT, 3 AMP</td>
</tr>
<tr>
<td>T1</td>
<td>RKC81</td>
<td>1</td>
<td>TRANSFORMER-SHIELD ASSEMBLY</td>
</tr>
<tr>
<td>T2</td>
<td>5IA212</td>
<td>1</td>
<td>POWER TRANSFORMER</td>
</tr>
<tr>
<td>PL1</td>
<td>RKC45</td>
<td>1</td>
<td>NEON PILOT LIGHT ASSEM. (RESISTOR INTERNAL)</td>
</tr>
<tr>
<td></td>
<td>RKC6</td>
<td>1</td>
<td>KNOB (BLACK)</td>
</tr>
<tr>
<td></td>
<td>RKC67</td>
<td>1</td>
<td>KNOB (GRAY)</td>
</tr>
</tbody>
</table>
NOTES:
1. ALL CAPACITORS IN MFD AND 100 VOLTS OR MORE UNLESS OTHERWISE SHOWN. ELECTROLYTIC CAPACITORS SHOWN IN MFD x VOLTS.

2. ALL RESISTORS 1% 1/4 WATT UNLESS OTHERWISE SHOWN.

3. THE FOLLOWING SYMBOLS DENOTE:
   - \( I \) : WIRING
   - \( + \) : PC. BOARD
   - \( \) : COMMON GROUND BUSES
   - \( + \) : DENOTES A C VOLTAGE
   - \( \) : DENOTES D C VOLTAGE
   - ALL VOLTAGES MEASURED WITH A C LINE = 120 V, MIC. I AND MASTER CONTROLS MAX. ALL OTHERS MIN. MIC. I INPUT 1KHZ SUCH THAT AUX. OUTPUT IS 1 VOLT. AUX OUTPUT LOADED WITH 47K OHMS, HIGH IMP. MIC. OUTPUT LOADED WITH 33K OHMS. DC VOLTAGES MEASURED WITH 11 MEGOHM VTVM. A C VOLTAGES MEASURED WITH 1 MEGOHM AC VTVM. VALUES ARE TYPICAL AND MAY VARY ±15%.

MODEL M68P
MICROPHONE MIXER CIRCUIT DIAGRAM