

MICROPHONE MIXERS



The Shure M68A and M68FCA are five-channel, portable microphone mixers for use with sound reinforcement, tape recording and audio-visual systems. The two units are identical except that the M68A has three-pin (male) XLR input connectors and the M68FCA has three-socket (female) XLR input connectors. Both units operate from 120-volt $\pm 10\%$, 50/60 Hz ac sources, and are internally switchable to 240-volt $\pm 10\%$, 50/60 Hz operation.

Features

- Four microphone inputs with individual slide switches for selection of low impedance (balanced or unbalanced) or high impedance (unbalanced)
- High-level auxiliary input suitable for tape, tuner, and accessories
- Individual volume control to balance each input
- Master volume control to simultaneously control level of all inputs
- High- (unbalanced) or low-impedance (balanced or unbalanced) microphone level output. Impedance selected to match microphone input of associated amplifier
- High-impedance auxiliary output
- Facility for connecting two or more mixers together to obtain additional microphone inputs (two mixers connected together give a total of eight microphone inputs and one auxiliary input)
- Listed by Underwriters' Laboratories, Inc., and by Canadian Standards Association as Certified

SPECIFICATIONS

Gain (at 1,000 Hz)

INPUT	OUTPUTS		
	Low Imp. Mic.	High Imp. Mic.	High Imp. Aux.
Low Imp. Mic. .5 mV produces	+ 6 dB 1.0 mV	+ 30 dB 15.5 mV	+ 57 dB 355 mV
High Imp. Mic. 5 mV produces	- 16 dB .78 mV	+ 8 dB 12.7 mV	+ 35 dB 285 mV
Aux. 50 mV produces	- 38 dB .64 mV	- 14 dB 10 mV	+ 13 dB 227 mV

Frequency Response

Flat ± 3 dB, 40 Hz to 20,000 Hz

Hum-Noise

70 dB below rated output (Aux. Output)

Equivalent Input Noise

150 ohm source, 123 dB below 1 volt

Impedance

INPUT	DESIGNED FOR USE WITH	ACTUAL IMPEDANCE
Low Imp. Mic	Balanced or unbalanced 25 to 600 ohm microphones	300 ohms
High Imp. Mic.	Unbalanced 10 to 50 kilohm microphones	60 kilohms
Auxiliary	100 ohm to 10 kilohm unbalanced high-level sources	40-70 kilohms*
OUTPUT	DESIGNED FOR USE WITH	ACTUAL IMPEDANCE
Low Imp. Mic.	Balanced or unbalanced 25 to 600 ohm microphone-level circuits	150-300 ohms*
High Imp. Mic.	Unbalanced 10 to 50 kilohm microphone-level circuits	30-40 kilohms*
Auxiliary	Unbalanced high-impedance (10 kilohms or greater) auxiliary circuits	2.5-3 kilohms*

*Depending upon control settings

Clipping Levels (minimum)

INPUT	CLIPPING LEVEL
Low Imp. Mic.	30 mV
High Imp. Mic.	450 mV
OUTPUT	CLIPPING LEVEL
Low Imp. Mic.	60 mV
High Imp. Mic.	850 mV
Auxiliary	4 volts

Distortion

Less than 1% total harmonic distortion when low-impedance microphone output is at 20 mV level, high-impedance microphone output is at 200 mV level, and auxiliary output is at 2.0 volt level

Phase

All microphone inputs and outputs are in phase. Auxiliary input and output are in phase with each other but out of phase with pin 3 of microphone connectors

Operating Voltage

120 volts $\pm 10\%$, 50/60 Hz, 3 W (internally switchable to 240-volt $\pm 10\%$ operation; see Service section)

Dimensions

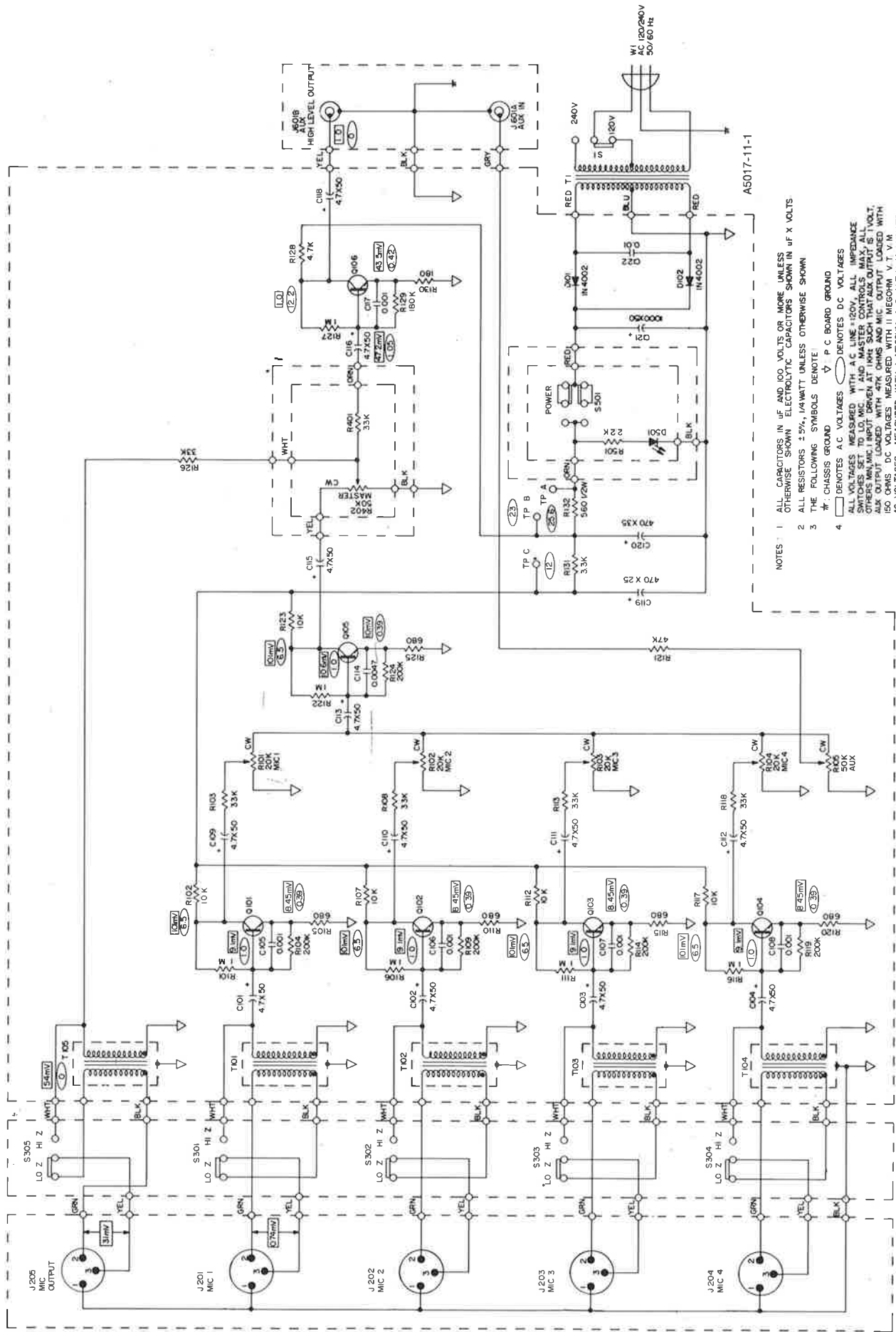
69.8 mm H x 290 mm W x 133 mm D (2-3/4 in. x 11-13/32 in. x 5-1/4 in.)

Net Weight

1.7 kilograms (3 lb 13 oz)

Certifications

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- NOTES:
- 1 ALL CAPACITORS IN μ F AND 100 VOLTS OR MORE UNLESS OTHERWISE SHOWN. ELECTROLYTIC CAPACITORS SHOWN IN μ F X VOLTS
 - 2 ALL RESISTORS $\pm 5\%$, 1/4 WATT UNLESS OTHERWISE SHOWN
 - 3 THE FOLLOWING SYMBOLS DENOTE:
 - P.C. BOARD GROUND
 - ⊕ CHASSIS GROUND
 - DENOTES A.C. VOLTAGES
 - ⊖ DENOTES D.C. VOLTAGES
 - 4 ALL VOLTAGES MEASURED WITH A.C. LINE 120V. ALL IMPEDANCE SWITCHES SET TO LO. MIC. I AND MASTER CONTROLS. MAX. ALL OTHERS MIN. MIC. INPUT DRIVEN AT 100 μ THAT AUX OUTPUT IS 1VOLT. AUX OUTPUT LOADED WITH 47K OHMS AND MIC OUTPUT LOADED WITH 200 OHMS. VOLTAGES MEASURED WITH 11 MEGOHM V.T.V.M. A.C. VOLTAGES MEASURED WITH 11 MEGOHM A.C. V.T.V.M. VALUES ARE TYPICAL AND MAY VARY $\pm 15\%$.
 - 5 ALL COMPONENTS AND CONNECTIONS ENCLOSED BY DASHED LINES ARE PARTS OF PRINTED CIRCUIT BOARD ASSEMBLY.

CIRCUIT DIAGRAM

NOTE: J201-J204 are 3-pin (male) XLR connectors in M68A and 3-socket (female) in the M68FCA.