

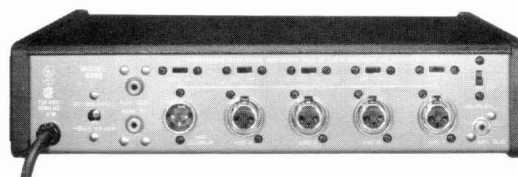
GENERAL

The Shure Model M268 is a five-input portable microphone mixer designed for use with sound reinforcement, tape recording and audio-visual systems. Its excellent operational characteristics, compact size, and functional versatility make the M268 a fine choice as a primary or add-on mixer in any sound system.

The Model M268E is similar to the M268 except that it is designed for connection to a 210- to 250-volt ac power line. All information applies to both units except for references to ac operating voltage, fuse and power line cord.

M268 Features:

- Wide, flat frequency response and extremely low distortion at full output
- Very low line noise and radio frequency interference susceptibility
- Four switch-selectable low-impedance balanced or high-impedance unbalanced inputs
- High-level auxiliary input for tape, tuner and accessories
- Individual feedback-type active gain controls for all five inputs
- Master volume control sets overall output level
- Simplex power for condenser microphones
- High- (unbalanced) or low-impedance (balanced) microphone-level output matches most amplifier inputs
- High-impedance auxiliary output for high-level equipment inputs
- Direct mix bus for simple mixer interconnection ("stacking")
- Ac or external dc operation. Noiseless automatic switchover to external power in case of ac line failure
- Automatic muting circuit prevents speaker damage during turn-on and -off
- Regulated power supply is unaffected by line voltage fluctuations



- Compact and lightweight, with rugged, abrasion-resistant case
- M268 (only): Listed by Underwriters' Laboratories, Inc. and listed by Canadian Standards Association as Certified

SPECIFICATIONS

Frequency Response

40 Hz to 20,000 Hz, ± 3 dB

Voltage Gain (at 1,000 Hz)

(Outputs terminated: mic 150 ohm/33 kilohms; aux 47 kilohms; mix bus 3.3 kilohms)

INPUT	OUTPUT			
	Lo Imp Mic	Hi Imp Mic	Aux Out	Mix Bus
Low-Impedance Microphone	+ 30 dB	+ 54 dB	+ 78 dB	+ 24 dB
High-Impedance Microphone	+ 7 dB	+ 31 dB	+ 55 dB	+ 1 dB
Aux In	- 15 dB	+ 9 dB	+ 33 dB	- 21 dB
Mix Bus	- 6 dB	+ 18 dB	+ 42 dB	--

Inputs

INPUT	IMPEDANCE		Input Clipping Level
	Designed for use with	Actual (Internal)	
Lo Imp Mic	Bal or unbal 19 to 600 ohms	1,000 ohms	- 32 to - 5 dBV* (25 mV to 0.56V)
Hi Imp Mic	Unbal 10 to 50 kilohms	140 kilohms	- 10 to + 18 dBV* (0.32V to 7.9V)
Aux	100 ohms to 10 kilohms high-level unbalanced	43 kilohms	+ 14 to + 30 dBV* (5.0V to 32V)
Mix Bus	3.3 kilohms	3.3 kilohms	+ 8 dBV (2.5V)

* Depending on control setting

Distortion

0.2% or less THD from 40 to 20,000 Hz with lo imp mic output at 80 mV level, hi imp mic output at 1.5V level, and aux out at 8.0V level

Outputs

OUTPUT	IMPEDANCE		Output Clipping Level
	Designed for use with	Actual (Internal)	
Lo Imp Mic	Any lo imp (19 to 600 ohms) mic circuit	50 ohms	-20 dBV (100 mV)
Hi Imp Mic	Unbal 10 to 50 kilohms mic circuit	5 kilohms	+4.5 dBV (1.7V)
Aux	10 kilohm or greater unbal high-level circuits	2.2 kilohms	+17 dBV (7.1V)
Mix Bus	3.3 kilohms	3.3 kilohms	-8 dBV (0.4V)

Noise

Equivalent input noise: -128 dBV (lo imp mic 150 ohms - 300-20,000 Hz) at full gain

Equivalent input hum and noise: -125 dBV (lo imp mic 150 ohms - 20-20,000 Hz) at full gain

Output noise: -90 dBV (master control down), -65 dBV (master up) (input controls down, 300-20,000 Hz)

Output hum and noise: -82 dBV (master down), -60 dBV (master up) (input controls down, 20-20,000 Hz)

Common-Mode Rejection

65 dB minimum with 100 mV input at 100 Hz

Control Interaction

Less than 1 dB with any control combination

Phase

All microphone inputs and outputs and mix bus are in phase; aux input is in phase with aux output, but out of phase with pin 3 of mic connectors

Simplex Power

30 Vdc open circuit, 3.3 kilohms series resistance

Operating Voltage

Ac operation

M268: 105-125 volts, 50/60 Hz, 5W

M268E: 210-250 volts, 50/60 Hz, 5W†

Dc operation

A268B Battery Power Supply (optional accessory): 27 volts nominal at 12.2 mA typical no-signal, 12.5 mA typical full output; 16.2 volts minimum; approximately 40 hours battery life with alkaline batteries, 4 hours/day duty cycle, simplex off

External power: 30 Vdc, 12.6 mA no-signal, 12.8 mA full output

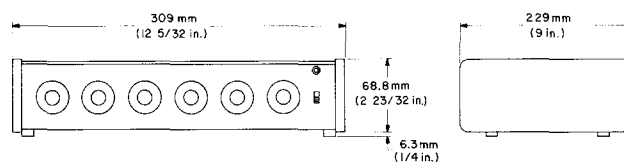
Temperature Range

Operating: -18° to 57°C (0° to 135°F)

Storage: -29° to 74°C (-20° to 165°F)

Dimensions

See Figure 1



OVERALL DIMENSIONS
FIGURE 1

Weight

Net: 1.9 kg (4 lb 2 oz)

Packaged: 2.8 kg (6 lb 2 oz)

Certifications

M268 (only): Listed by Underwriters' Laboratories, Inc. and listed by Canadian Standards Association as Certified

CONTROLS AND CONNECTORS

WARNING

This apparatus must be earthed (grounded)! The M268 power supply is energized when the unit is connected to an ac source; disconnect mains (power) plug from supply when not in use.

Model M268E

Model M268E is supplied with a three-conductor power-line cord without a plug. The plug should be installed by qualified service personnel. The brown lead should be connected to the "live" or "hot" terminal of the plug, and the blue lead to the neutral terminal. The green/yellow lead is the grounding conductor and should be connected to the ground or earth terminal of the plug.

Inputs

A maximum of four low- or high-impedance dynamic, ribbon or condenser microphones can be connected to receptacles marked MIC 1, MIC 2, MIC 3 and MIC 4. The inputs are designed for low-impedance microphones with 19 to 600 ohms impedance or high-impedance microphones. Both low- and high-impedance microphones can be used simultaneously. Crystal or ceramic microphones are not recommended. Impedance is selected by a slide switch above each input. The input receptacles are professional three-socket audio connectors.* See Figure 2 for low- and high-impedance connections to inputs. Note that some condenser microphones produce very high output signals which may overload the inputs of many mixers; the M268's feedback-type active gain controls virtually eliminate the need for in-line attenuators to compensate for these "hot" microphones.

* Designed to mate with Cannon XL series, Switchcraft A3 (Q.G.) series or equivalent connector.

† Can be rewired for 105-125 Vac operation (see Service section)

The rear-panel phono jack marked AUX IN will accept output from a high-impedance, high-level source such as a tape recorder or am-fm tuner.

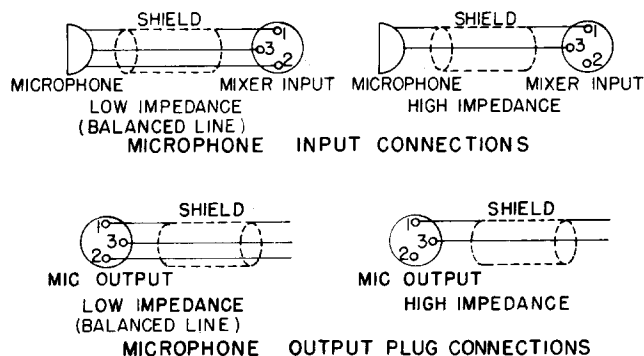


FIGURE 2

Outputs

The connector marked MIC OUTPUT is a dual-impedance output selected by the switch above the connector. This output is the "mixed" output of all the input sources and is designed to work into a balanced or unbalanced 25- to 600-ohm microphone line or into a high-impedance unbalanced amplifier or tape recorder microphone input. The connector is a professional three-pin audio connector.* See Figure 2 for output connector configurations.

The phono jack marked AUX OUT is a high-impedance, high-level, unbalanced output designed primarily to feed a power amplifier requiring 0.1 to 2 volts input, or the auxiliary or tuner input of an amplifier or tape recorder. This output will also drive the input of a Shure Model M63 AUDIO MASTER®. Interconnecting cables should be limited to a maximum length of about 25m (75 ft).

Controls

In addition to the power ON/OFF switch (an adjacent LED indicates power-on in ac operation), the front panel contains five individual input gain controls designated MIC 1 through MIC 4 and AUX, and a MASTER gain control for the total program output. Note that the input connectors are located on the rear panel directly behind their corresponding gain controls.

The M268 has feedback-type active gain controls for lower noise and greater dynamic range. In general, the individual gain control adjusted for the required output. If overload distortion (clipping) occurs when using high-level sources, reduce the individual gain control settings. Unused individual gain controls should be kept at the minimum setting (counterclockwise).

Mix Bus

The rear-panel MIX BUS phono jack facilitates the "stacking" of mixers to obtain additional inputs without using any of the M268 inputs. Connecting the mix buses of two M268s, for instance, directly connects their mixing systems, providing two independent master controls and two isolated output amplifiers with 10 individually controlled inputs. Note that the gain will be reduced by 6 dB, but noise specifications are not

adversely affected by this interconnection. Mix bus interconnection can also be made with other Shure mixers such as the M267 and SE30.

Simplex Power

The M268 provides power for condenser microphones such as the Shure SM81 and SM85. The rear-panel SIMPLEX OFF/ON switch controls the application of simplex voltage to all low-impedance inputs. With the SIMPLEX switch on and the rear-panel LO/HI switches in the LO position, +30 Vdc is applied to pins 2 and 3 of each input connector. Series current-limiting resistance is 3.3 kilohms for each input. When using other condenser microphones with the M268, verify that the voltage and resistance requirements are compatible.

Balanced low-impedance microphones (dynamic, ribbon, self-powered condensers) can be used in combination with simplex-powered condenser microphones. **IMPORTANT:** Do not turn on the SIMPLEX switch when using **unbalanced** low-impedance microphones; objectionable hum will result. Turn off the SIMPLEX switch when condenser microphones are not being used.

Use only high-quality cable, as intermittent shorts between broken shield wires and balanced conductors will cause offensive noise transients in the system.

BATTERY OPERATION – EXTERNAL POWER

In addition to ac operation, the M268 can be operated from an external battery supply (Shure Model A268B) or any well-filtered dc supply providing 30 Vdc. Current drain is typically 12.5 mA at 8.0V output level. Battery operation is recommended both for remote, on-location operation, and as an emergency source in case of failure of the ac power source.

The A268B contains three 9-volt transistor radio batteries which will power the M268 at full rated output. Alkaline battery life is approximately 40 hours at 4.0V output, 4 hours per day use. Note that battery operation with simplex-powered microphones will increase battery drain.

To power the M268 from an external 30 Vdc source, obtain a power plug (Switchcraft S-760 or S-765 or equivalent) and attach it to the power source leads, observing proper polarity.

CAUTION: The 30 Vdc input circuit of the M268 is not fused. An external 30 Vdc source should be provided with a 0.25A, 250V in-line fuse as a safety precaution.

With a battery supply or external dc supply connected, the M268 will automatically and silently switch to battery operation should the ac line voltage fail.

ACCESSORIES

The **Model A268B** Battery Power Supply can be used as a sole source of power for the M268, or as a standby supply in case of ac power failure. Attaches to side of M268.

The **Model A268R** Rack Panel Kit consists of a 19 in. x 3½ in. (483 mm x 89 mm) precut rack panel and necessary hardware for rack mounting the M268 in a standard 19 in. (483 mm) rack panel.

* Designed to mate with Cannon XL series, Switchcraft A3 (Q.G.) series or equivalent connector.

The **Model RKC169** Rack Panel Bracket Kit enables owners of the Shure A68R Rack Panel Kit (originally designed for the Shure M67 and M68 Mixers) to rack-mount the M268 with the A68R.

GUARANTEE

This Shure product is guaranteed in normal use to be free from electrical and mechanical defects for a period of one year from date of purchase. Please retain proof of purchase date. This guarantee includes all parts and labor. This guarantee is in lieu of any and all other guarantees or warranties, express or implied, and there shall be no recovery for any consequential or incidental damages.

SHIPPING INSTRUCTIONS

Carefully repack the unit and return it prepaid to:

Shure Brothers Incorporated
Attention: Service Department
1501 West Shure Drive
Arlington Heights, Illinois 60004

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.

SERVICE

WARNING

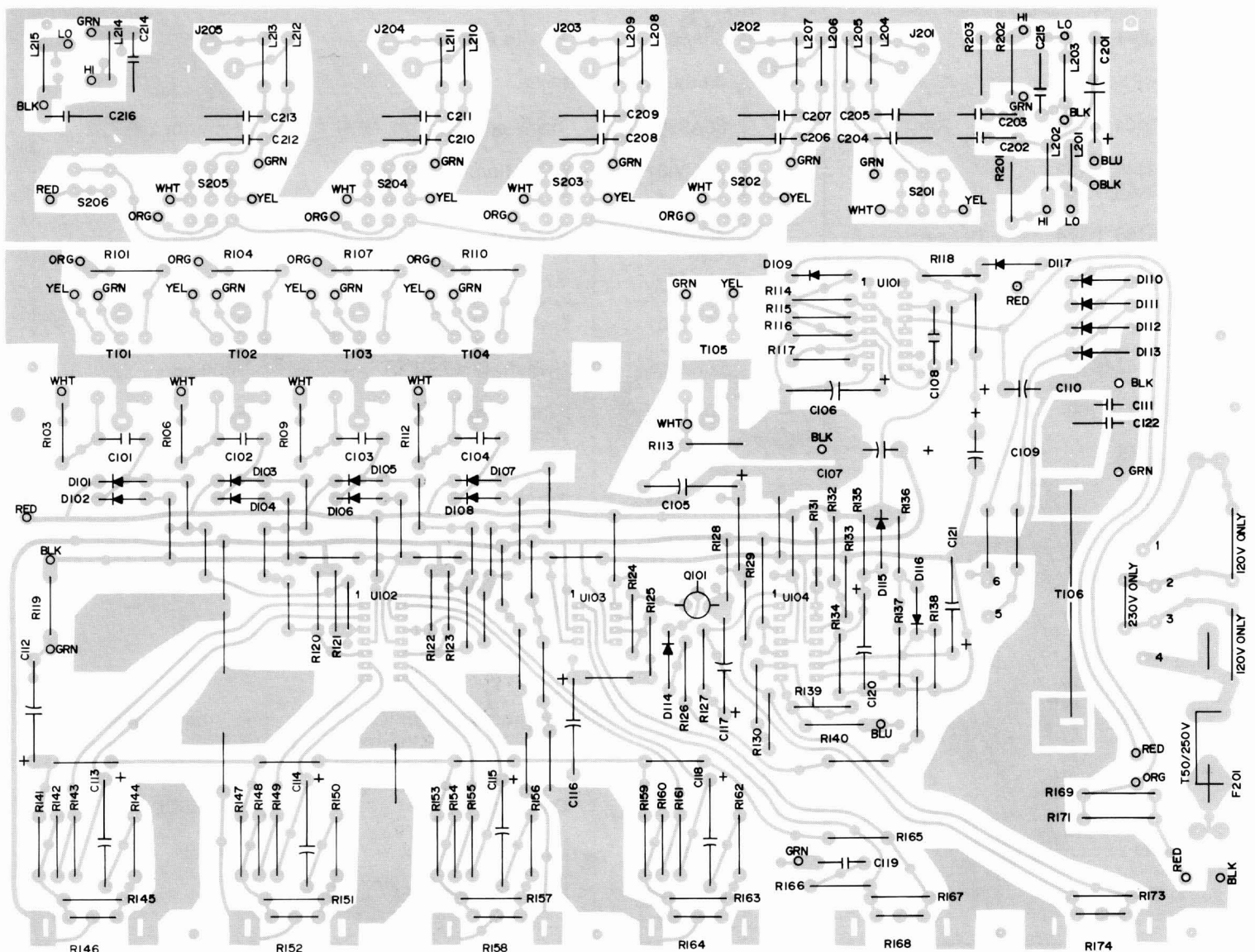
Voltages in this equipment are hazardous to life. Refer servicing to qualified service personnel.

M268E Operation at 105-125 Vac

The M268E is supplied wired for operation at 210-250 Vac. To rewire the M268E for operation at 105-125 Vac, proceed as follows.

1. Disconnect M268E from ac line.
2. Remove end caps and cover.
3. Locate Power Transformer T106 at right center of printed circuit board. Remove jumper marked "230V ONLY" at right of T206. Add two jumpers between holes marked "120V ONLY."
4. Replace Fuse F101 (presently 0.05A, 250V, time lag) with 0.1A, 250V, time lag unit (Shure 80B380, Schurter 034.3117).
5. Replace cover and end caps, and mark rear panel to reflect new operating voltage range.

PRINTED CIRCUIT BOARDS



REPLACEMENT PARTS LIST

Reference Designation	Replacement Kit No.*	Replacement Kit Consists Of:			Commercial Alternate
		Qty.	Part No.	Description	
C107	--	—	86L629	Capacitor, Electrolytic, 470 uF, 35V	Sprague 503D477G035
C109-C110	--	—	86K629	Capacitor, Electrolytic, 220 uF, 60V	None
D1	--	—	86D442	Diode, Light-Emitting	GI MV5075C
D101-D108, D114-D116	--	—	86A415	Diode, Silicon, Computer, 75V	TI 1N4148
D109, D113, D117	RKC21	4	86A404	Silicon Rectifier, 100V, 1/2A	Motorola 1N4002
F101	--	—	80F159	Fuse, Slow-Blow, 0.1A, 250V (M268)	Littelfuse 313000 Series
F101	--	—	80C380	Fuse, Time Lag, 0.05A, 250V (M268E at 210-250V)	Schurter 034.3104
J201	--	—	95A8012	Connector, 3-Pin	ADC PCM-3-D
J202-J205	--	—	95A8011	Connector, Three-Socket	ADC PCF-3-D
L201-L215	--	—	80A365	Ferrite Bead Ring	Stackpole 57-3425
MP1-MP6	—	—	90A8028	Knob	None
Q101	RKC89	4	86A350	Transistor, Silicon, NPN	Motorola 2N5210
R146, R152, R158, R164	--	—	46A8001	Potentiometer, 100k	None
R168, R174	--	—	46B8001	Potentiometer, 200k	None
S1	--	—	55A53	Switch, Slide, DPDT	None
S201, S206	--	—	55B8001	Switch, Slide, DPDT	None
S202-S205	--	—	55B8008	Switch, Slide, 3PDT	None
T101-T104	--	—	90A8032	Transformer, Input	None
T105	--	—	90A8051	Transformer, Output	None
T106	--	—	51A8008	Transformer, Power (M268)	None
T106	--	—	51A8003	Transformer, Power (M268E)	None
U101	--	—	86A8800	Integrated Circuit, Voltage Regulator	SGS L146C
U102	--	—	86B808	Integrated Circuit, Quad Op Ampl (Selected for NF)	Raytheon RC4156DB
U103	--	—	86B811	Integrated Circuit, Dual Op Ampl (Selected for NF)	Raytheon RC4559NB
U104	--	—	86A808	Integrated Circuit, Quad Op Ampl	Raytheon RC4156DB
W1	--	—	90A8045	Line Cord (M268)	None
W1	--	—	90B8045	Line Cord (M268E)	None

* Parts listed as RKC Kits should be ordered by that kit number. Any orders received for piece parts where RKC Kit number is shown will be shipped in RKC quantities.

