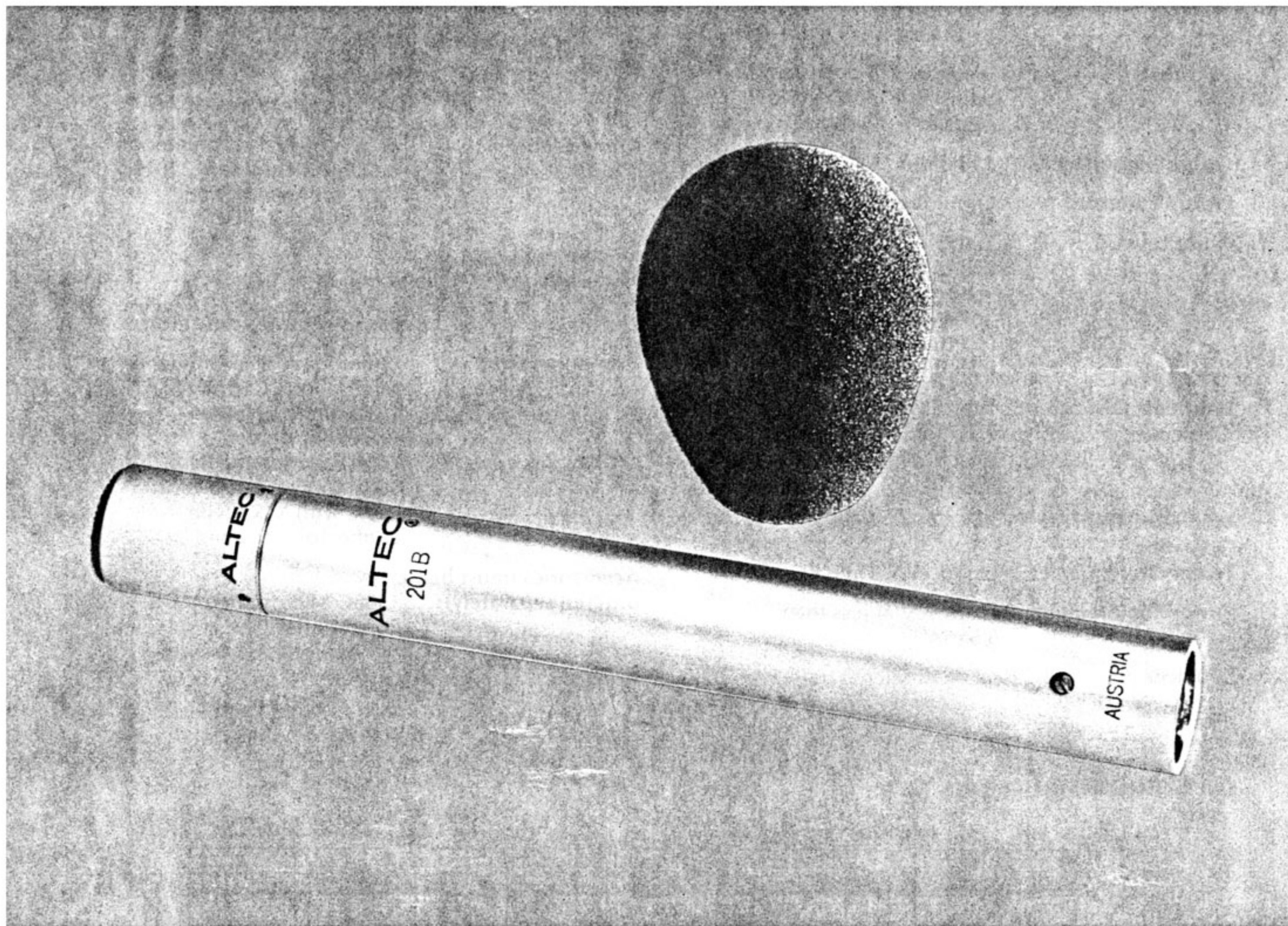


C71 OMNIDIRECTIONAL CONDENSER MICROPHONE SYSTEM



DESCRIPTION

The C71 is a condenser microphone system with omnidirectional pickup pattern featuring a wide, smooth frequency response, low noise level and high sensitivity.

The basic system consists of an omnidirectional condenser cartridge, microphone base, foam windscreen and slip-on mic stand adapter. Power is supplied by any phantom power supply or microphone preamplifier having 150 to 250

ohms input impedance and 9V to 52V dc at 5.5 mA.

The highly professional reproduction characteristics of the C71 make it an excellent microphone system for stage and concert halls, studio recording, and high-quality commercial sound installations where an omnidirectional pickup pattern is desired.

Specifications and components subject to change without notice. Overall performance will be maintained or improved.

SPECIFICATIONS

Type:	Condenser microphone system
Frequency Response:	Uniform from 20 Hz to 15 kHz (see Figure 1)
Sensitivity:	-40 dBm/10 dynes/cm ² * adjustable in four 10 dB steps to -70 dBm
Output Impedance:	150 ohms
Pickup Pattern:	Omnidirectional
Noise Level:	≤ 1.5 μV RMS "A"-weighted (-114 dBm), lowest gain setting ≤ 2.5 μV RMS "A"-weighted (-110 dBm), highest gain setting
Harmonic Distortion:	Typically less than 0.1 THD for output levels up to -10 dBm, 100 Hz to 10 kHz
Maximum Ambient Operating Temperature Range:	Up to 55°C (131°F)
Power Requirements:	9V to 52V at less than 5.5 mA

* 10 dynes/cm² = 1 Pascal = 10 Microbars

Connector:	XLR3-12 (male) on 201B Base
Pin Connection:	1 — shield, phantom power negative 2 — signal, in-phase phantom power 3 — signal, out-of-phase phantom power
Dimensions:	0.76" (1.94 cm) diameter by 6.62" (16.8 cm) long (201B Base with microphone cartridge installed)
Weight (Base and Cartridge):	5.3 oz (150. g)
Finish:	Nonreflective satin chrome
Components:	Omnidirectional Condenser Microphone Cartridge 189A Slip-on Holder Wind/Pop Screen 201B Microphone Base 186A Cable Set; 25-foot cable with XLR3 type connectors attached
Accessories (must be ordered separately):	1588C Microphone Preamplifier (See Microphone Accessories catalog)

OPERATING INSTRUCTIONS

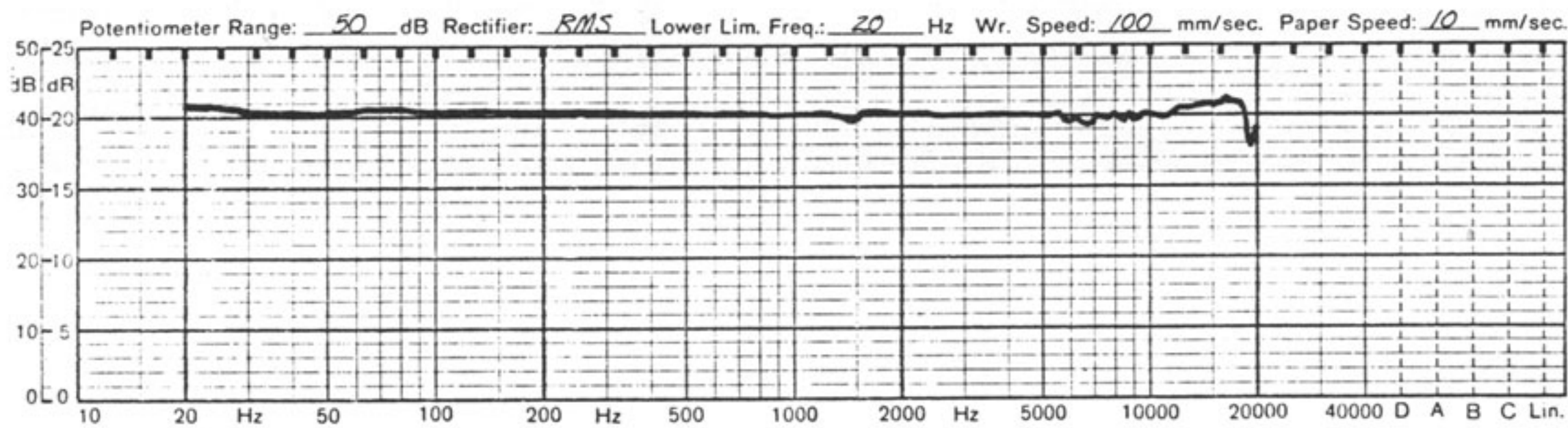


Figure 1. C71 System Frequency Response (201B Microphone Base)

CABLE SET (OPTIONAL ACCESSORY)

The 186A Cable Set consists of a 25-foot length of two-wire shielded and jacketed microphone cable equipped with one XLR3-12 and one XLR3-11C type connector. The cable may be used between the base and the preamplifier, or in multiples as extensions. Up to 1000 feet of cable may be inserted between the preamplifier and the base.

MICROPHONE CARTRIDGE

The C71 microphone cartridge has an omnidirectional pickup pattern. The microphone produces voltages in response to sound pressure because of the variations in capacity between a moving diaphragm and a stationary electrode connected to a source of polarizing voltage passed through high resistance.

CAUTION

The microphone cartridges are precision elements, and normal care should be exercised in handling. The microphone units should be kept dry and free from dirt.



Figure 2. C71 Omnidirectional Microphone Element

MICROPHONE OPERATING POWER

The C71 microphone system is designed to operate from phantom power with a source such as the ALTEC 1588C microphone preamplifier, which supplies an operating voltage of +20 volts dc.

Input Transformer Center Tap Powering Circuit

If a dc voltage of 9 to 12V is available, connect this voltage source directly to the ungrounded center tap of the microphone input transformer. See Figure 3.

If the dc voltage is between 12 and 52V, a series dropping resistor (R_v) is required. Value of R_v is determined via the graph of Figure 5. For example, if a +24V dc power source is used, select a 4700 ohm resistor (R_v max) for minimum current consumption. If minimum current consumption is not a consideration, an intermediate value of the resistor may be used (from 2000 to 4700 ohms).

Two-Resistor Artificial Center Powering Circuit

When the microphone input transformer is not center-tapped, or input attenuation networks are used, the powering circuit requires two resistors which must not differ from each other by more than 1%. See Figure 4.

If a dc voltage of 9 to 12V is available, connect this voltage source to the artificial center of two 664 ohm resistors ($2R_v$). See Figure 4. The Input transformer center tap is not grounded.

If the dc voltage is between 12 and 52V, determine the value of the two resistors (R_v) from the resistor value chart of Figure 5. Double the resistor value derived from the chart and connect these resistors as shown in Figure 4. For example, a 24V source indicates the use of two 9400 ohm resistors ($-2R_v$) for minimum current consumption.

Use of the largest resistor value (R_v max) shown for various voltages in Figure 5 is recommended for minimum current consumption (i min). The range of current consumption (i min) is shown by Figure 6.

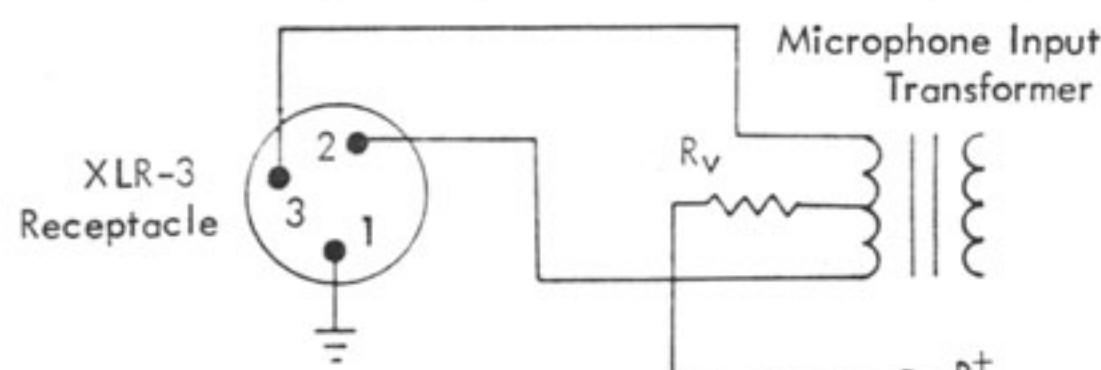


Figure 3. Input Transformer Center Tap Powering Circuit

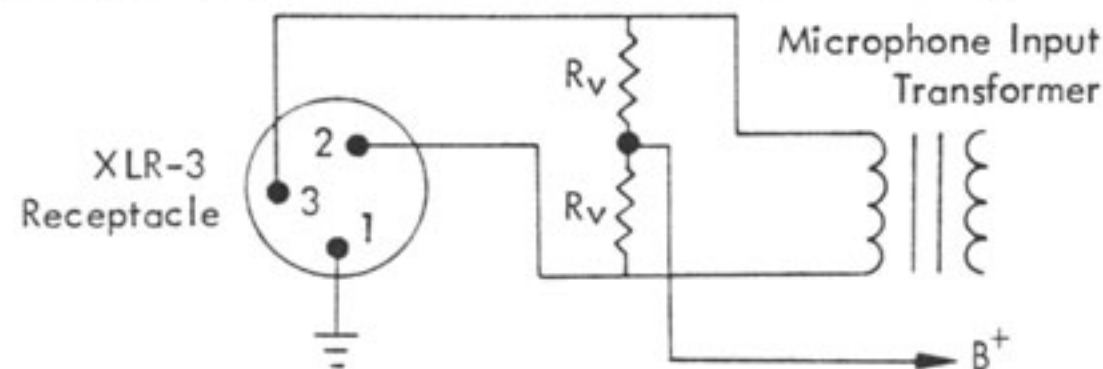


Figure 4. Two-Resistor Artificial Center Powering Circuit

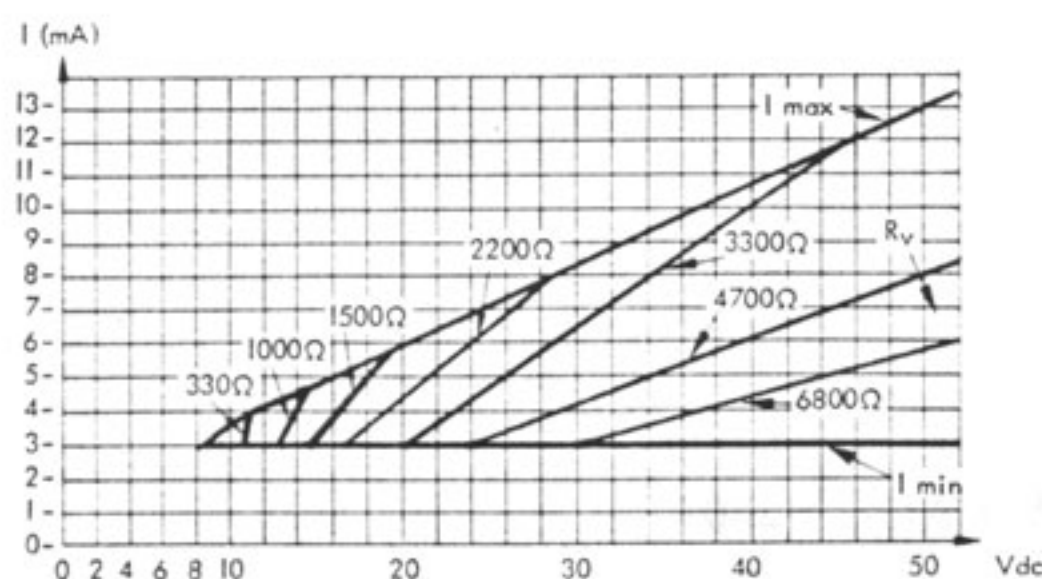


Figure 5. Resistor Value Chart

If minimum current consumption is not a consideration, an intermediate value of the two resistors permits a wider range of supply voltage, as shown by the shaded area of Figure 5. Example supply voltage ranges for various resistor values are shown as follows:

R_v	Supply Voltage Range (dc)
1000 ohms	13 to 15 volts
1500 ohms	14 to 18 volts
2200 ohms	17 to 26 volts
3300 ohms	20 to 46 volts
4700 ohms	24 to 52 volts

Double these values for both resistors ($2R_v$) when using the artificial center tap method.

WIND/POP SCREEN

The Wind/Pop Screen has been developed for the C71 microphone system. It is extremely effective in wind noise and 'pop' elimination. The windscreen will attenuate wind noise approximately 20 dB without deteriorating the HF response or discrimination.

The 'pop' or explosive sound produced by most people when pronouncing the letter 'P', and sometimes 'B', in certain words, is effectively reduced with the windscreen, thus ensuring optimum close proximity performance.

WINDSCREEN INSTALLATION

The Windscreen is made of open cell foam. It is secured to the cartridge and base by tightness of fit only. No threads or setscrews are used to secure the windscreen.

To install the windscreen, align its opening over the top of the cartridge and push down on the windscreen with a slight twisting motion. To remove the windscreen, reverse this procedure.

189A SLIP-ON HOLDER

The 189A Slip-On Holder, made of high-impact-resistant Cylolac plastic, grips the 201B Base and provides a light stream-lined swivel attachment with $\frac{5}{8}$ "-27 thread which may be attached to a floor or desk stand. The 189A holds the microphone securely, yet permits immediate release for maximum flexibility of microphone usage. It is not necessary to disconnect the cable assembly when removing the microphone from the holder.

MICROPHONE POSITIONING

An omnidirectional microphone is sensitive to sound in a 360-degree spherical pattern, and may be used with sound sources to its front or side. However, for critical applications wherein flat response is necessary, use front (0° incidence).

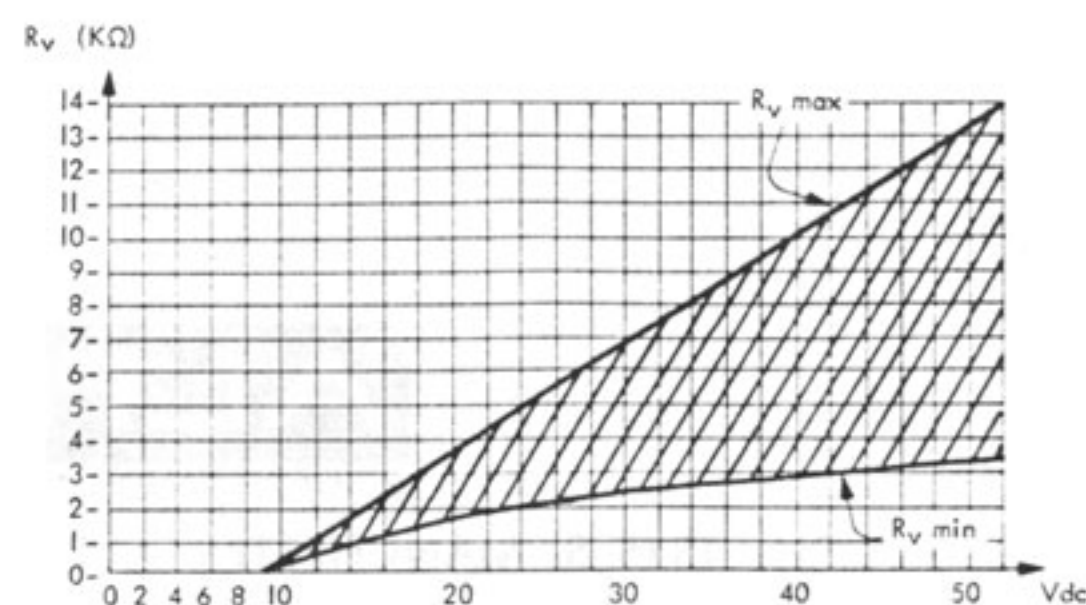


Figure 6. Current Consumption Chart

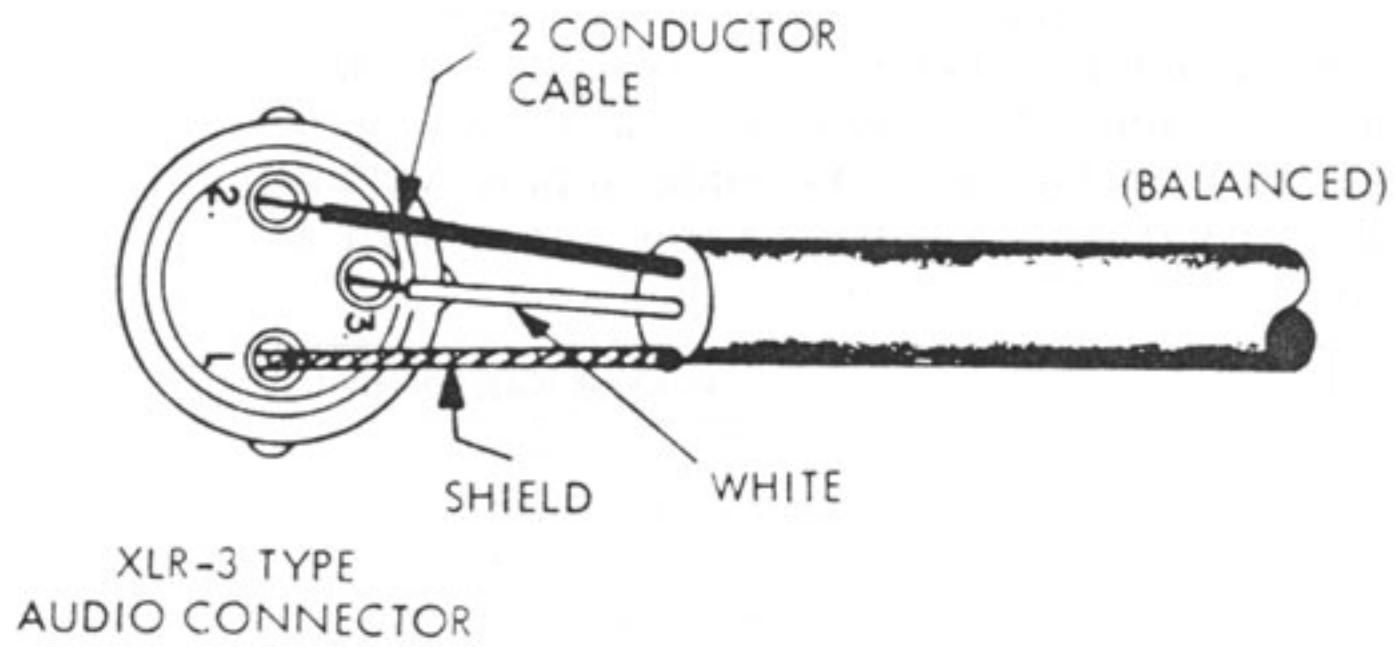


Figure 7. Microphone Cable Connection

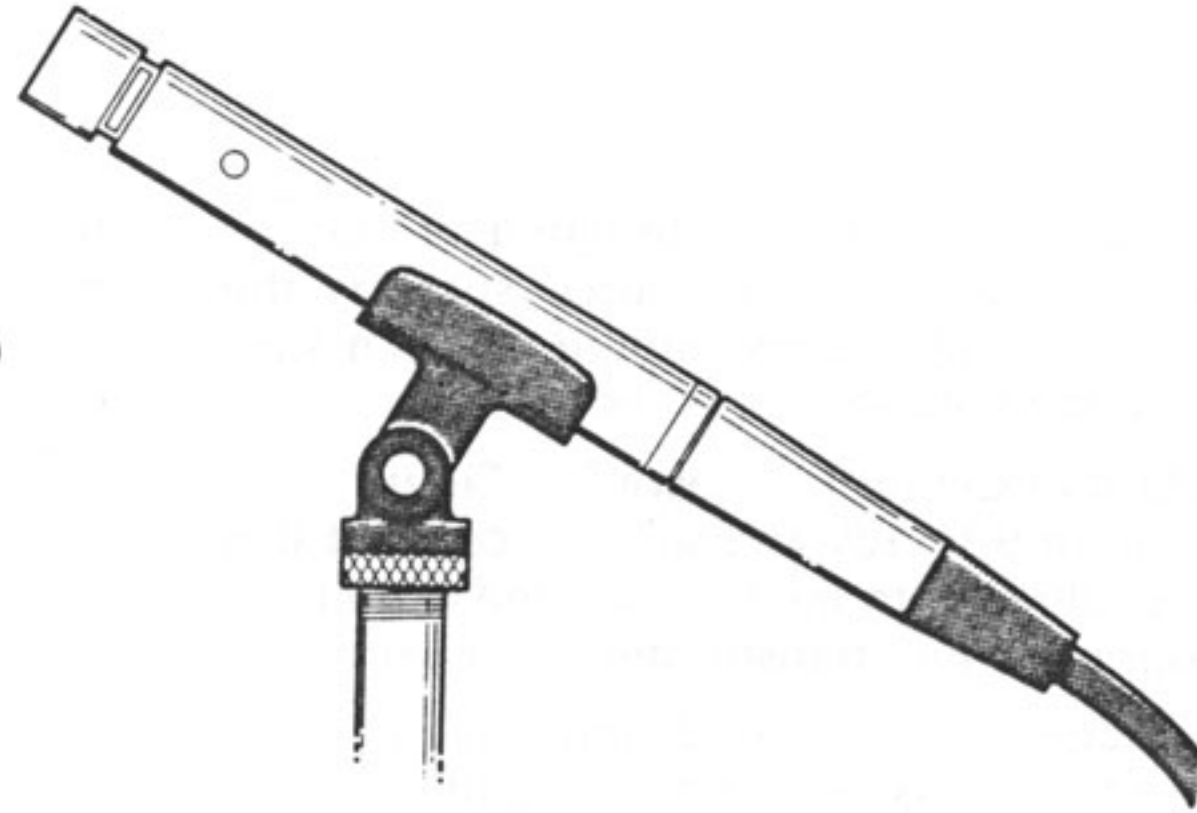


Figure 8. Slip-On Holder

ARCHITECT AND ENGINEER SPECIFICATIONS

The microphone system shall be the omnidirectional condenser type with solid-state circuitry, and shall be capable of operating from a 9V to 52V dc, 5.5 mA phantom source. The microphone shall consist of a microphone cartridge, a base housing the microphone circuitry, a slip-on adapter and a windscreen.

The microphone system shall meet the following criteria. Frequency response, uniform from 20 Hz to 15 kHz. Sensitivity, -40 dBm, adjustable in four 10 dB steps to -70 dBm (ref.: 10 dynes/cm²). Output impedance, 150 ohms. Noise level, less than 1.5 μ V RMS weighted "A" lowest gain setting, and less than 2.5 μ V RMS weighted DIN 65605, highest setting.

Operating temperature range, up to 55°C (131°F). Power requirements, 9V to 52V.

The microphone shall be 0.76" D x 6.62" L, and shall weigh 5.3 oz including base and cartridge. The finish of the microphone shall be nonreflective satin chrome.

The microphone shall be supplied with a 25-foot cable with XLR3-type connectors, a wind-pop screen and a slip-on holder. The optional ALTEC 1588C Microphone Preamplifier shall be ordered separately.

The microphone system shall be the ALTEC Model C71.



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