SHURE®
222 HARTREY AVE., EVANSTON, IL. 60204 U.S.A.
MICROPHONES AND ELECTRONIC COMPONENTS
AREA CODE 312/866-2200 • CABLE: SHUREMICRO
TWX: 910-231-0048 TELEX: 72-4381

DATA SHEET

A95 SERIES LINE MATCHING TRANSFORMERS

A95U

A95UF

GENERAL

Models **A95U** and **A95UF** are high-quality transformers that make it possible to connect a low-impedance microphone to a high-impedance amplifier or vice versa. The transformers are completely reversible. Both ends are available with a variety of connectors to allow instant plug-in, with no need to rewire, to most amplifiers and microphone cable connectors.

The low-impedance end of the A95 Series matches low-impedance microphones or amplifier inputs; the high-impedance end matches high-impedance microphones or amplifier inputs.

The transformers provide a convenient way to connect high-impedance microphones to low-impedance amplifier inputs and solve the problem of excessive high-frequency loss and objectionable hum pickup. Locate the transformer close to the microphone: no more than 4.6m (15 ft) of cable should separate them. Unlimited cable lengths can then be used between the transformer and the amplifier input.

The transformers convert high-impedance amplifier inputs to low impedance, allowing the use of low-impedance microphones and unlimited cable lengths. Locate the transformer close to the amplifier: no more than 4.6m (15 ft) of cable should separate them.

The A95 Series Line Matching Transformers are built into compact, sturdy, magnetically shielded cases and are provided with input and output connectors and adapters described under Specifications.

HIGH-IMPEDANCE CONNECTIONS

The high-impedance end of the Models **A95U** and **A95UF** is fitted with an Amphenol MC1M connector. In addition, the **A95U** and **A95UF** are supplied with phone jack and phone plug adapters. The transformers can be connected to most high-impedance amplifiers using the phone plug adapter. The phone plug adapter is equipped with a locking ring which is useful for locking the phone plug on all-metal jacks having external threads (such as the Shure VA300 inputs). IMPORTANT: When using the phone plug adapter with nylon or other non-metallic microphone input jacks, *do not tighten* the phone plug locking ring. Intermittent grounding may result if the locking ring is tightened.

When the amplifier input connectors are other than ¼ inch phone jacks, a short adapter cable must be assembled with appropriate mating connectors to connect the transformer to the amplifier. Use an Amphenol MC1F for the high-impedance transformer connection. Connect the signal or "hot" conductor of the adapter cable to the center contact of the mating MC1F connector and connect the ground conductor (shield) to the shell of the connector. To prevent excessive high-frequency loss, a cable length of 1.5m (5 ft) or less is recommended at the high-impedance end of the transformer.

To use the **A95U** or **A95UF** to couple a high-impedance microphone to a low-impedance amplifier, use the phone jack adapter supplied. Most high-impedance microphones are provided with cables that terminate in standard ¼ inch two-conductor phone plugs for amplifier connection. The A95 phone jack adapter is compatible with this type of phone plug and provides a quick and easy means of connection.

In the event that the high-impedance microphone being used is provided with an MC1F cable connector, the A95 can be used without the supplied adapters, using the MC1M connector provided at the high-impedance end of the transformer.

LOW-IMPEDANCE CONNECTIONS

A professional three-pin audio connector* is provided at the low-impedance end of the transformer. The **A95U** transformer has a male three-pin connector and the **A95UF** transformer has a female three-pin connector. The transformers are supplied wired for 75-300 ohm microphone impedance; for use with 19-75 ohm impedance, see the section entitled *Internal Connections.*

A low-impedance, two-conductor, shielded microphone cable equipped with a compatible three-pin connector can be connected directly to the transformer provided that it is a balanced line using pins 2 and 3 for the signal or "hot" leads and pin 1 for the shield connection. In the event that the microphone cable and transformer connectors are not compatible, a mating connector for the low-impedance end must be obtained. When using this connector, connect the two signal conductors of a balanced microphone line to pins 2 and 3; connect the shield to pin 1. For microphones with a separate shield and ground lead, connect both to pin 1. For an unbalanced microphone line, connect the signal conductor to pin 3 and connect the shield or ground leads to both pins 1 and 2.

In applications where the transformer is being used to couple a high-impedance microphone line to a low-impedance amplifier or mixer equipped with professional three-pin audio connectors,* the transformer can be

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

27A1061 (SD)

(OVER)

Printed in U.S.A.

plugged directly into the input connector. If the amplifier connector or input connections are not compatible with the transformer low-impedance output, an adapter cable will be required. The adapter cable should be wired in accordance with the instructions given in the preceding paragraph. Installation of a cable between the transformer and amplifier can also be used to extend the working distance between the microphone and amplifier. Since this cable is operating in a low-impedance circuit, the length is not critical and can be varied to suit the application. Limit the high-impedance cable length between the microphone and transformer to 4.6m (15 ft).

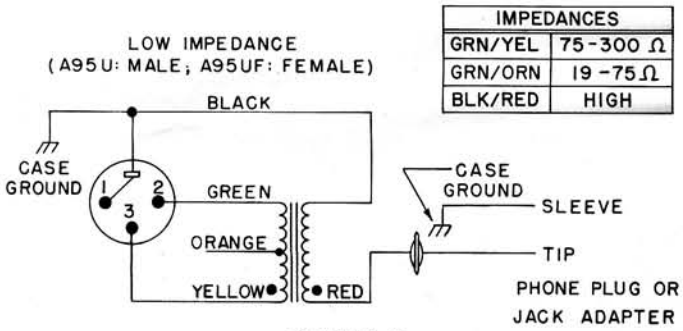

FIGURE 1

INTERNAL CONNECTIONS

The internal connections of the **A95U** and **A95UF** Transformers are shown in Figure 1.

IMPEDANCE SELECTION

The **A95U** and **A95UF** Transformers are supplied wired for 75-300 ohm microphone impedance. For use with 19-75 ohm impedance, proceed as follows:

1. Remove connector insert at low-impedance end of the transformer by turning screw in (counterclockwise) and withdrawing insert from case.
2. Remove yellow lead from pin 3 and insulate bare wire of yellow lead with insulator from orange lead.
3. Solder orange lead to pin 3.
4. Reassemble connector insert into transformer housing. NOTE: On the **A95U** Transformer, rotate connector insert—yellow lead included—three turns to twist leads before reassembling in housing. Seat screw securely in place.

SPECIFICATIONS

Frequency Response

Flat, 20 Hz to 20 kHz. Response at 20 Hz: no more than 3 dB down from flat.

Impedance

Low-impedance end: 19-75 ohms and 75-300 ohms

High-impedance end: High (41,000 ohms with 150-ohm source on 75-300 ohm winding)

Dc Resistance

High impedance: 4300 ohms

Low impedance (19-75 ohms): 37.5 ohms

Low impedance (75-300 ohms): 75 ohms

Voltage Step Ratio

	19-75 ohms	75-300 ohms
Low impedance to high impedance (up):	+28 dB	+22 dB
High impedance to low impedance (down):	−28 dB	−22 dB

Maximum Recommended Input Levels

Driving Source Impedance	Winding Being Driven	Maximum Level
33 ohms	19-75 ohms	0.5V
200 ohms	75-300 ohms	1.0V
600 ohms	High Imp.	10V
5,000 ohms	High Imp.	10V
33,000 ohms	High Imp.	10V

Case

Full magnetic shield; steel with gray enamel

Case Diameter

19.9 mm (¾ in.)

Case Length

A95U: 63.5 mm (2½ in.)

A95UF: 88.9 mm (3½ in.)

Connectors

Model **A95U:**

Low impedance: Professional three-pin male audio connector*

High impedance: Amphenol MC1M type connector

Model **A95UF:**

Low impedance: Professional three-pin female audio connector*

High impedance: Amphenol MC1M type connector

Adapters:

Phone jack/MC1F type adapter (Model RK170P)

Phone plug/MC1F type adapter (Model RK123P)

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

Net Weight (with Adapters)

A95U: 125 grams (4⅜ oz)

A95UF: 130 grams (4½ oz)

Packaged Weight

A95U: 220 grams (7¾ oz)

A95UF: 227 grams (8 oz)

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.