



**Fine Audio Instruments**



## **AW-250 DUAL MONO BALANCED POWER AMPLIFIER**

Owner's Manual

**WARNING:** To reduce risk of fire or electric shock, do not expose this appliance to rain or moisture. Verify line voltage before use.

Do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel. The warranty is void if the product is tampered with by non authorised personnel. Use only authorised Electrocompaniet service station.

Welcome to the world of Electrocompaniet

We sincerely thank you for selecting an amplifier from Electrocompaniet. We hope you will enjoy years of listening pleasure and true high end musical performance from your audio system. Kindly read this owners manual to familiarise yourself with the set before operation.

### The Electrocompaniet Story

Electrocompaniet was founded in 1973 in Oslo, Norway, to manufacture an amplifier designed by Per Abrahamsen. The design were based upon a new approach to transistor amplifier design developed by Dr. Matti Ojala and Jan Lohstro.

It had long been recognised that transistor amplifiers had a characteristic sound that many audiophiles and music lovers found unnatural.

Dr. Ojala and Mr. Lohstro analysed transistor amplifiers to determine what actually created the "transistor sound" in general transistorised designs. The results of their innovative design work were incorporated in the first Electrocompaniet design, the legendary 25 watt amplifier.

This product were the first commercial transistor amplifier to use this new design approach, and the amplifier was immediately recognised as dramatically more musical sounding than any other transistor amplifier. The same design philosophy, has been constantly updated by additional research and development. This philosophy form the basis of all the current Electrocompaniet Ampliwire and Preampliwire Dual Mono Balanced designs.

Electrocompaniet have always given extensive listening test of all it's designs the highest priority. Every product designed by our engineers must meet the varied and exacting standards of the listening panel, carefully selected to represent a cross section of musical taste and experience. Electrocompaniet designs go back and forth between the design laboratory and the listening panel until both engineers and listeners are completely satisfied, and ensured the that the design has met it's technical and sonic objectives.

All Electrocompaniet products are handmade by highly skilled technicians, and extensively tested for maximum performance and reliability.

Final adjustments are made only after an extended period of operation to insure the best possible performance under conditions similar to those of actual use.

Electrocompaniet Ampliwire and Preampliwire are sold in more than 25 countries , providing the ultimate listening pleasure to dedicated music lovers world-wide.



## The design features of Ampliwire 250 DMB

After the Electrocompaniet 25 watt amplifier had established a new standard for transistor amplifiers, research was undertaken to find ways to make the amplifier even better, and to extend its highly musical sound quality to more powerful amplifier designs. The engineers at Electrocompaniet were not satisfied by only reducing the commonly recognised types of distortion to low levels. They recognised that distortion appears in many forms, and that distortion was still audible in listening tests even when conventional categories of distortion were at astonishingly low levels.

Traditionally, designers increased feedback to make a larger portion of the output signal control the amplifiers response. Our listening tests showed us that simply applying more feedback was not the answer. In fact, as one kind of distortion went down, other parameters would be adversely affected, leading to an overall degradation of sound quality. We knew that the other conventional design approach of eliminating feedback completely was not the answer either, because this would cause high distortion levels, and as a result would produce a "woolly" sound.

The answer to the dilemma was found in a novel approach to feedback theory. We developed a feedback concept that allowed local feedback to be applied around individual stages of the amplifier circuit. This approach allowed us to avoid the sonic disadvantages of overall feedback from output to input. The concept was further developed to reduce phase- and interphase distortion between stages of the amplifier as well. We were able to concentrate the loop feedback on the stages of the amplifier where it resulted in audible improvement.

Stability margins were also expanded because feedback no longer affected the frequency response. The use of this concept of individual gain blocks - complex in design but simple in function - allowed us to reduce distortion to minute values in all the products.

The amplifier is divided into two separate sections or gain blocks. The input block is a transconductance amplifier without overall feedback. This avoids large output current being fed back to the input, and mixed with the minute input signal. The output block is a transresistance amplifier with parallel feedback. This is done to prevent higher frequencies than the feedback loop can handle, from entering the loop. An approach like this will prevent Transient Inter modulation Distortion (TIM) and Slewing Induced Distortion (SID), eliminating the need for an extremely wide bandwidth.

All stages work in Class A with an efficiency of less than 0,1%. The power supply of the AW 250 DMB consists of two 650 VA toroidal transformer. Furthermore, the power supply consists of a 120.000 micro farad reservoir divided into twelve 10.000 micro farad capacitors in parallel with 4,7 and 0,1 micro farad polycarbonate- and polypropylene capacitors.



### **Unpacking the amplifier:**

Immediately upon receipt of the amplifier, inspect the carton for possible damage during shipment. If the carton is visibly damaged, a claim must be filed with the carrier as soon as possible.

Unpack the unit carefully, and please do remember to save all packaging materials for future shipment. The carton and packaging have been designed to offer the safest possible protection when transporting your amplifier.

### **The content of the carton is as follows:**

- 1 pcs Electrocompaniet Ampliwire 250 DMB
  - 1 pcs AC power cord
  - 1 Owners Manual
  - 1 pcs Spare fuse, 10.0 AT slow-blow 5x20mm (120V AC)  
5.0 AT slow-blow 5x20mm (240V AC)
- The actual spare fuse is located inside the AC 3 pin receptacle.

### **Connecting the AW 250 DMB**

#### Connecting to mains

Check that the mains voltage printed on the rear panel of the amplifier corresponds with the line voltage in the territory were you intend to use your amplifier.

#### **How to avoid damages**

A good operating practice is to turn off all equipment before any connections or disconnections are made. Do not under any circumstances connect or disconnect equipment when power is turned on. If you insist on connecting or disconnecting while power is turned on, you should be aware that the design of the RCA plug generates a large transient when inserting the plug. This could damage both the speakers and the amplifier.

#### **The rear panel**

The rear panel of the Ampliwire AW 250 DMB is equipped with two sets of RCA input sockets, marked + and -, and one XLR female socket, for each channel.

#### **Single-ended (normal) input and operation**

Upon arrival, the amplifier is set for single-ended use with a shorting plug in the negative RCA input. This will short the negative (-) input of the amplifier to ground. With shorting plugs in position, the amplifier is ready to be connected in a normal way with a single ended preamplifier.



### Balanced XLR input and operation

The balanced mode can only be used if the preamplifier has a balanced output. In order to use the balanced XLR- input, turn off the amplifier, and **remove the shorting plugs from the negative (-) RCA inputs.** Use an XLR interconnect with GND on pin 1, + on pin 2 and - on pin 3.

### Balanced RCA input and operation

The balanced mode can only be used if the preamplifier has a balanced output. Be sure the amplifier is turned off. Remove the shorting plugs. Use 2 single (1 stereo) interconnect cables from the preamplifier to the power amplifier, connecting + and - outputs from the preamplifier to the + and - inputs of the corresponding channel on the amplifier. Make sure the + and - are not interchanged, as this will cause the system to operate out of phase, with very poor bass response as a result.

### Operating instructions:

#### How to turn on your system

You should always turn on your equipment in this order: Signal source devices (CD, tuner, etc) and preamplifier are turned on first. Allow 30 seconds of preheating before you turn on your power amplifier. When turning your system off, you should start by switching off your power amplifier, then the preamplifier, and finally your signal source devices. After switching on the power amplifier, there will be a 5 seconds delay before the speakers are connected. This will prevent large turn on/off transients to reach the speakers.

#### Replacing a blown main fuse:

Always remove the AC cord from the Inlet

The main fuse is located inside a small drawer in the AC inlet of the unit. If, for some reason the fuse blows, turn the unit off, and remove the AC cord from the inlet.

Open the drawer with a small screwdriver and remove the broken fuse. The spare fuse is located in the hole in front of the main fuse. Push the new fuse gently out of the hole, and place it in correct position (where the blown fuse was removed). Push the drawer gently back to the closed position, connect the power cord and turn the unit on.

Never replace a blown fuse with other values than printed on the unit.



**Warning:**

**The amplifier will be warm.**

Due to the high class A operating point used in the Electrocompaniet design, it is normal that the amplifier feels warm. Proper ventilation will be needed, and the amplifier should not be covered in. A good rule is to allow 1 - 2 inches of air sidewise, and 2 - 3 inches above the amplifier.

If placing the amplifier on the floor, be aware of carpets that can obstruct the ventilation underneath the amplifier.



## **Service Policy:**

### **When service is needed**

Your dealer will have all relevant information about the service centers in your area, and will ensure that your unit is serviced without delay. It is our general policy to have your amplifier returned to you within 5 working days. This is an average time, and could vary locally, depending on the work load at the service center.

If, for some reason, there are no service facilities available in your country, please ship the amplifier to the following address:

**ELECTROCOMPANIET A/S  
SOLHEIMVEIEN 36  
N-1473 SKAARER, NORWAY  
FAX +47 67911760  
E-mail : [elcomp@electrocompaniet.no](mailto:elcomp@electrocompaniet.no)**

You are responsible for all shipping charges, insurance, re-importation to your country, and duty arrangements. When shipping a product to the factory for service, always include the following:

- 1) A sales slip or other proof of purchase if repair is claimed under warranty.
- 2) A proforma invoice with value of the goods, stating that the amplifier is returned to Norway for repair.
- 3) An accompanying letter describing faults, symptoms, or problems with the amplifier.
- 4) Always ship the amplifier in its original carton and packaging material to prevent damage in transit.

Electrocompaniet will not accept responsibility for any damage caused in transit, no matter how ever caused.

If you require further information concerning the amplifier operation, or if you have any questions related to service, please do not hesitate to contact your dealer or national

Electrocompaniet distributor.



## Technical Specifications AW250DMB :

The following technical data were measured on randomised test objects and are typical data. All measurements are made with the following equipment:

Distortion analyser: Tektronix AA501  
Oscilloscope: Tektronix 468  
Oscillator: Tektronix SG505  
Frequency counter: Rascal 9838  
Phase meter: Hewlett Packard 3575A

### Amplifier section

Main voltage 120 V / 240 V. Clipping point of the amplifier is set to a level where total harmonic distortion (THD) is 0.2 %.

Output Impedance (20 Hz - 20 kHz)	< 0,008 Ohm
RCA (single) input impedance	220 kOhm
XLR (balanced) input impedance	110 kOhm
Input sensitivity for rated output	1 V
Max. peak current	> 100 A
THD (measured at 1 kHz half power, 8 Ohm)	< 0,001 %
THD (measured at 1 kHz -1 dB, 8 Ohm)	< 0,001 %
Noise (measured with both inputs shorted)	
400 Hz - 30 kHz :	90 $\mu$ V
10 Hz - 30 kHz :	100 $\mu$ V

### Rated output power

10 % change in line voltage will give app. 20 % change in output power.

8 Ohm<sup>2</sup> x 250 W  
4 Ohm<sup>2</sup> x 380 W  
2 Ohm<sup>2</sup> x 625 W  
1 Ohm<sup>2</sup> x 1100 W

**Power consumption** (no load or signal) 230 W

### Dimensions

Width 483 mm / 19 inches  
Depth 450 mm / 17 inches  
Height 210 mm / 8.2 inches  
Weight 39 kg. / 85.8 lbs.

The manufacturer reserves the right to alter these specifications without further notice.

