



ELECTROCOMPANIET

If music really matters...



AW 180

Mono Class A Power Amplifier

Owner's Manual



The design features of Ampliwire 180 Mono :

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 180 consists of one 650 VA toroidal transformer. Furthermore, the power supply consists of a 60.000 micro farad reservoir divided into six 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:

2 pcs Electrocompaniet Ampliwire AW 180 Mono

2 pcs AC power cord

1 Owners Manual

1 pcs Spare fuse, 10.0 AT slow-blow 5x20mm (120V AC)

6.3 AT slow-blow 5x20mm (220V AC)

The actual spare fuse is located inside the AC 3 pin receptacle.

Connecting the AW 180:

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 disconnection's 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 180M is equipped with two sets of RCA input sockets, marked + and -. In addition, one XLR female socket, and the on/off switch.

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 RCA output. Be sure the amplifier is turned off. Remove the shorting plugs. Use 4 single (2 stereo) interconnect cables from the preamplifier to each mono 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 sideways, 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 as
Breivikveien 7
N-4021 Tau, Norway
e-mail : service@electrocompaniet.no
web: www.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, 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 your national Electrocompaniet distributor.

Technical Specifications AW180M:

The following technical data were measured on randomised test objects and are typical data.

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 µV
10 Hz - 30 kHz :	100 µV

Rated output power

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

8 Ohm 250 W
4 Ohm 380 W
2 Ohm 625 W

Power consumption (no load or signal) 115 W

Dimensions

Width 215 mm / 8.5 inches
Depth 470 mm / 18.5 inches
Height 285 mm / 11.2 inches

Weight 22 kg. / 48.4 lbs.

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



Made in Norway

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