English

OPERATING INSTRUCTIONS

OMNITRONIC®

P-series power amplifiers

CAUTION!
Keep this device away from rain and moisture!
Unplug mains lead before opening the housing!

For your own safety, please read this user manual carefully before you initial start-up.

Every person involved with the installation, operation and maintenance of this device has to
- be qualilfied
- follow the instructions of this manual
- consider this manual to be part of the total product
- keep this manual for the entire service life of the product
- pass this manual on to every further owner or user of the product
- include every supplementay update with the original manual

INTRODUCTION

Thank you for having chosen an OMNITRONIC power amplifier. If you follow the instructions given in this manual, we can assure you that you will enjoy this device for many years.

Unpack your amplifier.

Please make sure that there are no obvious transport damages. Should you notice any damages on the A/C connection cable or on the casing, do not take the device into operation and immediately consult your local dealer.

Features

Powerful amplifier
Enormous power with highest brilliance • 2 gain-controls on the frontpanel • All operation-modes controllable via LEDs • LED-intensity adjustable via brightness control on the rear panel • Signal-inputs via XLR-female or 1/4"-jack-socket • Speaker connection via lockable Speakon-plugs or Banana/screw combination • Ground Lift-switch against humming • Bridged-switch for bridging • Many protection-circuits for optimized equipment-protection • Very rugged housing • 19" dimensions • High power/weight-relation

SAFETY INSTRUCTIONS

CAUTION!
Be careful with your operations. With a dangerous voltage you can suffer a dangerous electric shock when touching the wires!

This device has left our premises in absolutely perfect condition. In order to maintain this condition and to ensure a safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this user manual.

Important:
Damages caused by the disregard of this user manual are not subject to warranty. The dealer will not accept liability for any resulting defects or problems.

Always plug in the power plug least. Make sure that the power-switch is set to OFF position before you connect the device to the mains.

Keep away from heaters and other heating sources!

If the device has been exposed to drastic temperature fluctuation (e.g. after transportation), do not switch it on immediately. The arising condensation water might damage your device. Leave the device switched off until it has reached room temperature.

Never put any liquids on the device or close to it. Should any liquid enter the device nevertheless, disconnect from mains immediately. Please let the device be checked by a qualified service technician before you operate it again. Any damages caused by liquids having entered the device are not subject to warranty!

This device falls under protection-class I. The power plug must only be plugged into a protection class I outlet.

Never let the power-cord come into contact with other cables! Handle the power-cord and all connections with the mains with particular caution!

Make sure that the available voltage is not higher than stated on the AC voltage selector on the bottom.

Make sure that the power-cord is never crimped or damaged by sharp edges. Check the device and the power-cord from time to time.

Always disconnect from the mains, when the device is not in use or before cleaning it. Only handle the power-cord by the plug. Never pull out the plug by tugging the power-cord.

Before the device is switched on all faders and volume controls have to be set to "0" or "min" position.

CAUTION: Turn the amplifier on last and off first!

Keep away children and amateurs!

CAUTION: High volumes can cause hearing damage!

There are no serviceable parts inside the device. Maintenance and service operations are only to be carried out by authorized dealers.

OPERATING DETERMINATIONS

This device is a professional audio-amplifier for amplifying audio-signals. This product is allowed to be operated with an alternating current of 115/230 V, 50/60 Hz and was designed for indoor use only.

Do not shake the device. Avoid brute force when installing or operating the device.

When choosing the installation-spot, please make sure that the device is not exposed to extreme heat, moisture or dust. There should not be any cables lying around. You endanger your own and the safety of others!

Do not operate the device in extremely hot (more than 30° C) or extremely cold (less than 5° C) surroundings. Keep away from direct insulation (particularly in cars) and heaters.

Operate the device only after having familiarized with its functions. Do not permit operation by persons not qualified for operating the device. Most damages are the result of unprofessional operation!

Never use solvents or aggressive detergents in order to clean the device! Rather use a soft and damp cloth.

Please use the original packaging if the device is to be transported.

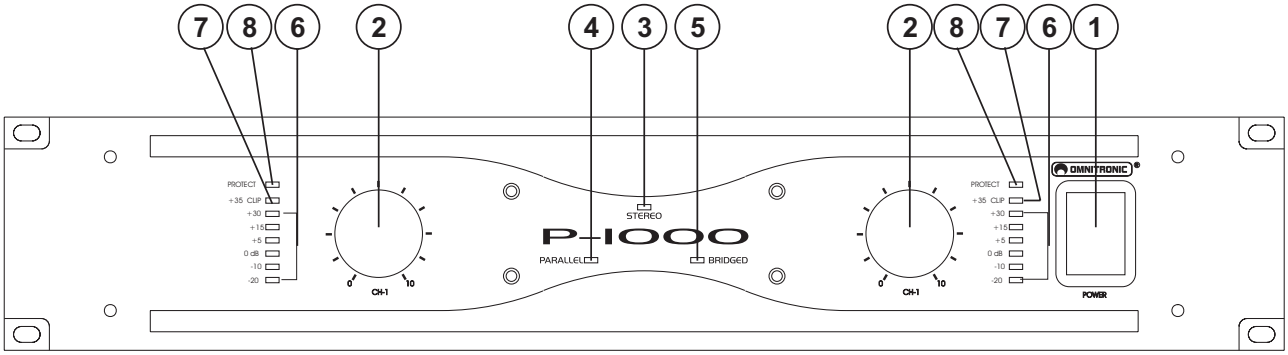
Never remove the serial barcode from the device as this would make the guarantee void.

If this device will be operated in any way different to the one described in this manual, the product may suffer damages and the guarantee becomes void. Furthermore, any other operation may lead to dangers like short-circuit, burns, electric shock, etc.

Please note: This user manual describes the P-1000 as a reference. Illustrations and features of the other models are comparable.

DESCRIPTION OF THE DEVICE

Frontpanel



(1) POWER SWITCH
Press this button to start operation.

(2) GAIN-CONTROLS
Adjust the desired volume here.

(3) STEREO-LED
This LED shines in Stereo-mode.

(4) PARALLEL-LED
This LED shines in Parallel-mode.

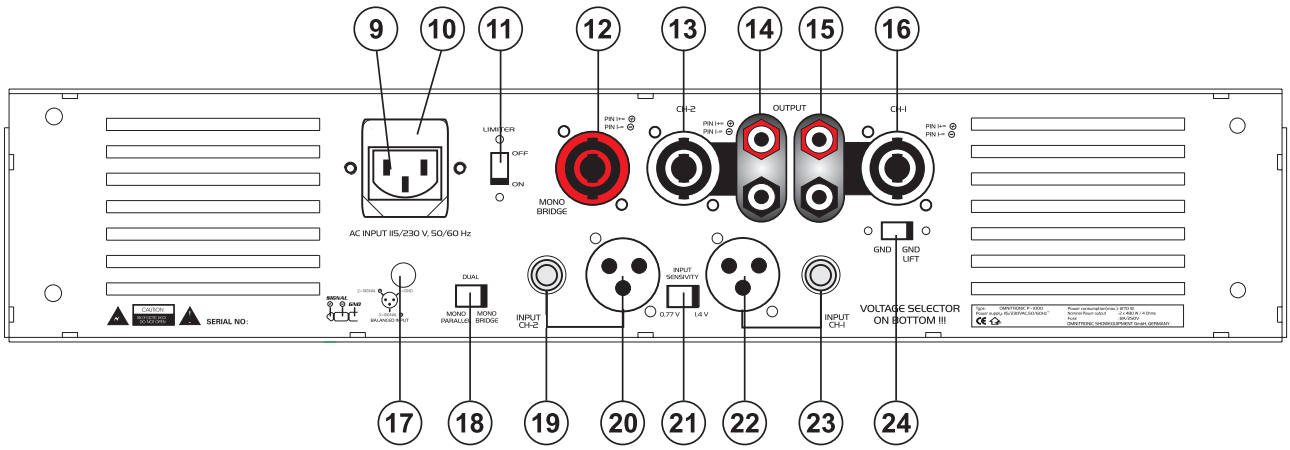
(5) BRIDGED-LED
This LED shines in bridged mode.

(6) LEVEL-LEDS
The LEDs are illuminated in accordance with the adjusted signal level.

(7) CLIP-LED
This LED flashes when the output signal starts distorting.

(8) PROTECT-LED
This LED is illuminated after switching the device on as long as the speakers are not connected with the amplifier.
If this LED is illuminated during the operation, one of the protection circuits is active. Please take the amplifier out of operation and check it.

Rear panel



(9) AC-CONNECTION
Used to plug the power cord in.
(10) FUSEHOLDER
Only replace the fuse when the device is disconnected from mains. Only use fuses of the same rating and power.
(11) LIMITER
(12) MONO BRIDGE-OUTPUT SOCKET
For connecting the speakers in bridged mode.
(13) CH-2-SPEAKON-OUTPUT SOCKET
For connecting the speakers of channel 2.
(14) CH-2-BANANA/SCREW COMBINATION
For connecting the speakers of channel 2.
(15) CH-1-BANANA/SCREW COMBINATION
For connecting the speakers of channel 1.
(16) CH-1-SPEAKON-OUTPUT SOCKET
For connecting the speakers of channel 1.
(17) VR FOR LIGHT-CONTROL
For adjusting the LED-intensity.
(18) PARALLEL/DUAL/BRIDGE-MODE SELECTOR
For selecting the desired operation mode.
(19) CH-2 JACK INPUT SOCKET
Connect the input signal here using a balanced ¼" stereo jack.
(20) CH-2 XLR INPUT SOCKET
Connect the input signal here using a balanced XLR-plug.
(21) INPUT SENSITIVITY-SELECTOR
For selecting the desired input sensitivity.
(22) CH-1 XLR INPUT SOCKET
Connect the input signal here using a balanced XLR-plug.
(23) CH-1 JACK INPUT SOCKET
Connect the input signal here using a balanced ¼" stereo jack.
(24) GROUND LIFT-SELECTOR

INSTALLATION

RACK-INSTALLATION

This amplifier is built for 19" racks (483 mm). The rack you use should be a Double-Door-Rack where you can open the frontpanel and the rear panel. The rack should be provided with a cooling fan. When mounting the Amplifier into the rack, please make sure that there is enough space around the device so that the heated air can be passed on. Steady overheating will damage your device.
You can fix the amplifier with four screws M6 in the rack.
Be careful when mounting the amplifier into the rack. Put the heaviest devices into the lower part of the rack. Be aware that fastening the amplifier with four screws on the front panel is not enough. In order to ensure safety, additional fastening by using ground and side bars is necessary.

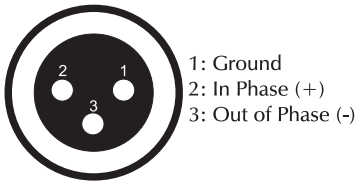
If racks are to be transported or used for mobile use, additionally fasten the devices by connecting the rear brackets with the side or ground bars of the rack. In this way, the amplifier cannot be pushed backwards. The front panel alone is not designed to absorb acceleration forces occuring during transportation.

INPUTS

A good cable run improves the sound quality remarkably. Input cables should be short and direct, since high frequencies will mostly be absorbed if the cables are unnecessarily long. Besides that a longer cable may lead to humming and noise trouble. If long cable runs are unavoidable, you should use balanced cables. Professionals recommend to connect the input-cables via balanced XLR-jacks.

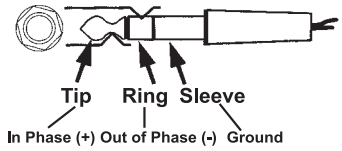
Occupation balanced XLR-connector:

Balanced XLR-socket:



Occupation balanced stereo-1/4“ jack-plug:

Balanced stereo 1/4“ jack-plug:



OUTPUTS

The high damping factor of your amplifier supplies a clear sound reproduction. Unnecessarily long and thin cables will influence the damping factor and thus the low frequencies in a negative way. In order to safeguard good sound quality, the damping factor should lie around 50. The longer a cable has to be, the thicker it should be.

Connect your speaker-systems via the Speakon-plugs or the Banana/screw combination (occupation red +, black -).

Switch-adjustments

Ground Lift-switch:
This switch allows the signal ground or chassis ground to be separated in case of a ground conflict. For highest safety of the equipment, it is recommended to keep the Ground Lift-switch in the GND FLOATING-position. In case of a ground conflict please set the ground lift-switch to GND LIFT.

CONNECTION TO THE MAINS

Connect the amplifier only after having made sure that the right voltage (230 V) is supplied and that the ground lead is earthed. This device falls under potection class I. Do not detach the ground lead from the housing!

OPERATION MODES

STEREO OPERATION

Normal operation mode of an amplifier, in which every channel gets its own signal. The most commonly used mode of amplifiers is stereo-operation at 4 Ohms. Make sure that the operation-mode-switch Bridge/Dual/ Parallel is set to Dual.

Calculation number of speakers – impedance

E.g. 1 speaker à 8 Ohm = 8 Ohm
2 speakers à 8 Ohm = 4 Ohm (parallel)
2 speakers à 8 Ohm = 16 Ohm (in line)

e.g. 1 speaker à 4 Ohm = 4 Ohm
2 speakers à 4 Ohm = 2 Ohm (parallel)
2 speakers à 4 Ohm = 8 Ohm (in line)
3 speakers à 4 Ohm = 1 Ohm (parallel), do never connect!!

This means that you can connect up to 2 speaker-system to an amplifier ranging to 4 Ohms. Caution: Make sure that the impedance of the connected speaker-systems is never below 4 Ohms.

N.B.:
The input-impedance of the speaker-systems should at least be the same or even higher than the output-impedance of the amplifier.

How to proceed:
Install the desired number of speaker-systems in the room. Connect the speakers among each other using the inputs and outputs. Connect the cable of the first speaker with the Speakon-plugs Output CH-1 and Output CH-2 of the amplifier. The signal will be transmitted to the individual speakers.

Connect the input signal to the XLR input-sockets CH-1 and CH-2 on the rearpanel.
Caution! Before switching on your amplifier, please refer to the explanations under Operation.
Adjust the level of each channel with the gain-controls CH-1 and CH-2 on the frontpanel.
Caution! Increase the level of each channel only so far that the PROTECT-LED lights up shortly. Thus, you avoid that the output signal is distorted and your speakers are damaged.

PARALLEL OPERATION

Connect the input signal to the input-plug CH-1.
Make sure that the amplifier is disconnected from the mains before you set the operation-mode-switch to parallel.
Connect your speakers to the Speakon-plugs Output CH-1 and Output CH-2.
Caution! Before switching on your amplifier, please refer to the explanations under Operation.
Adjust the level with the gain-control CH-1 on the frontpanel.

BRIDGING

Possibility to run the amplifier in mono-mode, i.e. via one channel. In this way, you can double the nominal output power. For stereo-operation, 2 amplifiers are needed.

Connect the input signal to the input-plug CH-1 on the rearpanel.
Make sure that the amplifier is disconnected from the mains before you set the operation-mode-switch on the frontpanel to Bridge.
Connect your speakers to the Speakon-plug Output CH-1 (Bridge P+1 & P+2).
Caution! Before switching on your amplifier, please refer to the explanations under Operation.
Adjust the level with the gain-control CH-1 on the frontpanel.

OPERATION

After having connected your amplifier to the mains, turn both gain controls counter-clockwise to Min-position. The last device to be switched on is the amplifier. The "ON" and "PROTECT" LED light up now. If it does not, check if the amplifier is connected to the mains correctly.
After the turn-on delay the speakers are activated (PROTECT-LED is off).
After having set the volume controls of the pre-amplifier in null-position, turn the gain controls of your amplifier to mid-position. You must not hear any loud humming. If there is humming nevertheless, check the connecting cables between the pre-amplifier and the amplifier. Now adjust the volume with the gain controls CH-1 and CH-2.
All important operating modes of the amplifier are arranged on the frontpanel.

-20 dB to 30 dB	output level
CLIP	short-circuit or impedance too low or signal distorted
PROTECT	active during stabilisation period after switching on or when one of the protective circuits started

If you want to switch off the system, **switch off the amplifier first** and then the pre-amplifiers in order to avoid acoustic shocks on the speakers.

PROBLEM CHART

PROBLEM:	CAUSE:	REMEDY:
No power.	• The power-cord is not connected.	• Check the power-cord and any extension-cables.
No sound.	• The power-cord of the respective device is not connected properly or not connected at all. • The connection-socket or the plug is dirty.	• Check the power-cord and if the plugs are tightly connected with the sockets. • Clean the socket and/or the plug.
Noise.	• The input-signal is too strong.	• Reduce the input-signal via the Gain-control.
Fan does not work, LEDs do not light up	• The power-cord is not connected.	Please check if the power is available
Protect LED lights up permanently	• Inputs receive DC-voltage. • Amplifier is overheated due to impurities. • Impedance of speakers too low • Short-circuit in speaker connection or in speakers • Technical default of amplifier	• Switch amplifier off and have the device checked by a service-technician. • Clean the fan-grille. • Connect other speakers. • Check speakers. • Switch amplifier off and have the device checked by a service-technician.

CLEANING AND MAINTENANCE

DANGER TO LIFE!
Disconnect from mains before starting maintenance operation!

We recommend a frequent cleaning of the device. Please use a soft lint-free and moistened cloth. Never use alcohol or solvents!

There are no servicable parts inside the device except for the fuse. Maintenance and service operations are only to be carried out by authorized dealers.

Replacing the fuse

If the fine-wire fuse of the device fuses, only replace the fuse by a fuse of same type and rating.

Please note: This fuse is being used for both 115 V and 230 V.

Before replacing the fuse, unplug mains lead.

Procedure:

Step 1: Open the fuseholder on the rearpanel with a fitting screwdriver.
Step 2: Remove the old fuse from the fuseholder.
Step 3: Install the new fuse in the fuseholder.
Step 4: Replace the fuseholder in the housing.

Should you need any spare parts, please use genuine parts.

If the power supply cable of this device becomes damaged, it has to be replaced by a special power supply cable available at your dealer.

Should you have further questions, please contact your dealer.

TECHNICAL SPECIFICATIONS P-250 & P-500

	P-250	P-500
Power supply:	115/230 V AC, 50/60 Hz ~	115/230 V AC, 50/60 Hz ~
Power-range:	230 V ± 10 % (206 V - 253 V)	230 V ± 10 % (206 V - 253 V)
Power consumption (max.):	475 W	675 W
Momentary music peak power at 1 KHz:	400 W / 4 Ohm	650 W / 4 Ohm
Maximum power output:	2 x 140 W / 4 Ohm	2 x 295 W / 4 Ohm
Nominal power output:	2 x 125 W / 4 Ohm	2 x 250 W / 4 Ohm
Power output sine:		
Stereo 4 Ohm	2 x 125 W	2 x 250 W
Stereo 8 Ohm	2 x 75 W	2 x 130 W
8 Ohms bridged	1 x 250 W	1 x 500 W
Frequency range:	22 - 31 000 Hz	22 - 31 000 Hz
Damping-factor:	> 150	> 150
Distortion factor:	0,01 %	0,01 %
Signal to Noise Ratio:	108 dB	108 dB
Channel seperation (at 1 KHz):	89 dB	89 dB
Min. input sensitivity:	0,77 V/26 dB/1,44 V	0,77 V/26 dB/1,44 V
Input impedance:	12 kOhms (unbalanced), 22 kOhms (balanced)	12 kOhms (unbalanced), 22 kOhms (balanced)
Output impedance:	> 0,02 Ohms	> 0,02 Ohms
Slew-rate:	> 35 V/µsec	> 30 V/µsec
Input-connectors:	2 x XLR-female-plug, 2 x 1/4"-jack-plug	2 x XLR-female-plug, 2 x 1/4"-jack-plug
Output-connectors:	2 x Speakon (stereo), 1 x Speakon (bridge), 2 x Banana/screw combination	2 x Speakon (stereo), 1 x Speakon (bridge), 2 x Banana/screw combination
Control elements:	Power switch, input attenuators (one per channel), Mode switch - Stereo/Parallel/Bridged, Ground Lift, Input-Level-Select (0,77 dB, 1,44 dB, 0 dB)	Power switch, input attenuators (one per channel), Mode switch - Stereo/Parallel/Bridged, Ground Lift, Input-Level-Select (0,77 dB, 1,44 dB, 0 dB)
LED indicators (per channel):	Power, Protect, Signal, Mode	Power, Protect, Signal, Mode
Protection circuits:	Short-circuit, DC-protection-circuit, Thermal protection-circuit, Notch, Softstart, Leak	Short-circuit, DC-protection-circuit, Thermal protection-circuit, Softstart
Construction:	Steel chassis, aluminium frontpanel	Steel chassis, aluminium frontpanel
Dimensions:	435 x 482 x 99 mm	435 x 482 x 99 mm
Weight:	10 kg	13 kg
Power/weight-relation:	11 W/kg	19 W/kg

TECHNICAL SPECIFICATIONS P-1000, P-1500 & P-2000

	P-1000	P-1500	P-2000
Power supply:	115/230 V AC, 50/60 Hz ~	115/230 V AC, 50/60 Hz ~	115/230 V AC, 50/60 Hz ~
Power-range:	230 V ± 10 % (206 V - 253 V)	230 V ± 10 % (206 V - 253 V)	
Power consumption (max.):	1175 W	1675 W	2875 W
Momentary music peak power at 1 KHz:	1270 W / 4 Ohm	1950 W / 4 Ohm	
Maximum power output:	2 x 582 W / 4 Ohm	2 x 840 W / 4 Ohm	
Nominal power output:	2 x 500 W / 4 Ohm	2 x 750 W / 4 Ohm	2 x 1000 W / 4 Ohm
Power output sine:			
Stereo 4 Ohm	2 x 500 W	2 x 750 W	2 x 1000 W
Stereo 8 Ohm	2 x 245 W	2 x 390 W	2 x 625 W
8 Ohms bridged	1 x 850 W	1 x 1250 W	1 x 1875 W
Frequency range:	22 - 31 000 Hz	20 - 31 000 Hz	20 - 40 000 Hz
Damping-factor:	> 200	> 200	> 400
Distortion factor:	0,01 %	0,01 %	0,01 %
Signal to Noise Ratio:	108 dB	108 dB	90 dB
Channel seperation (at 1 KHz):	89 dB	89 dB	70 dB
Min. input sensitivity:	0,77 V/26 dB/1,44 V	0,77 V/26 dB/1,44 V	0,77 V/26 dB/1,4 V
Input impedance:	12 kOhms (unbalanced), 22 kOhms (balanced)	12 kOhms (unbalanced), 22 kOhms (balanced)	20 kOhms (balanced)
Output impedance:	> 0,02 Ohms	> 0,02 Ohms	> 0,02 Ohms
Slew-rate:	> 35 V/µsec	> 40 V/µsec	60 V/µsec
Input-connectors:	2 x XLR-female-plug, 2 x 1/4"-jack-plug	2 x XLR-female-plug, 2 x 1/4"-jack-plug	2 x XLR-female-plug, 2 x 1/4"-jack-plug
Output-connectors:	2 x Speakon (stereo), 1 x Speakon (bridge), 2 x Banana/screw combination	2 x Speakon (stereo), 1 x Speakon (bridge), 2 x Banana/screw combination	2 x Speakon (stereo), 1 x Speakon (bridge), 2 x Banana/screw combination
Control elements:	Power switch, input attenuators (one per channel), Mode switch - Stereo/Parallel/Bridged, Ground Lift, Input-Level-Select (0,77 dB, 1,44 dB, 0 dB)	Power switch, input attenuators (one per channel), Mode switch - Stereo/Parallel/Bridged, Ground Lift, Input-Level-Select (0,77 dB, 1,44 dB, 0 dB)	Power switch, input attenuators (one per channel), Mode switch - Stereo/Parallel/Bridged, Ground Lift, Input-Level-Select (0,77 dB, 1,44 dB, 0 dB)
LED indicators (per channel):	Power, Protect, Signal, Mode	Power, Protect, Signal, Mode	Power, Protect, Signal, Mode
Protection circuits:	Short-circuit, DC-protection-circuit, Thermal protection-circuit, Softstart	Short-circuit, DC-protection-circuit, Thermal protection-circuit, Softstart	Short-circuit, DC-protection-circuit, Thermal protection-circuit, Softstart
Construction:	Steel chassis, aluminium frontpanel	Steel chassis, aluminium frontpanel	Steel chassis, aluminium frontpanel
Dimensions:	435 x 482 x 99 mm	435 x 482 x 99 mm	545 x 482 x 97 mm
Weight:	16,7 kg	23 kg	23 kg
Power/weight-relation:	30 W/kg	33 W/kg	43 W/kg

Please note: Every information is subject to change without prior notice. 06.06.2003 ©