

LAB.GRUPPEN

COOLEST

LIGHT WEIGHT

MASSIVE POWER

**You are a Sound Professional.
So are our fP Series power amplifiers.
You have the need – we provide the tools.
And we are not holding anything back.
That's why fP Series power amps are loaded with features.**



Perception is Dangerous.

About 100 years ago, when Jules Verne had ideas of boats that would take people under water, and spaceships that would allow traveling to the moon, everyone thought he was crazy. Today submarines are in daily use for various reasons, and the moon is well known thanks to the history of the Apollo programs.

Twenty years ago everyone thought that a lightweight power amplifier for professional use was an illusion. Such amplifiers were known to be unreliable, bad sounding at low frequencies, and drawing too much current from the mains.

SWITCH MODE TECHNOLOGY

Then came Lab.gruppen. It was time to throw old perceptions away. Today thousands of Lab.gruppen users bear testament to this. In the last 15 years each one of them tells a story of how

reliable our Switch Mode Technology is, how excellent it sounds and how easy they are to work with day in, day out.

If you have not heard any of these stories yet, or wonder what all the fuss is about then please keep reading. We will tell you why our amplifiers are special, what makes them the preferred choice of sound professionals, and why they are the safest trouble-free investment you are likely to make.

Time for you to re-think. Time for Lab.gruppen.



A ferrite transformer as used in fP Series (left) versus a conventional iron transformer as used in conventional designs (right).



6400 W into 2 Ω – weighing 10 kg / 22 lbs

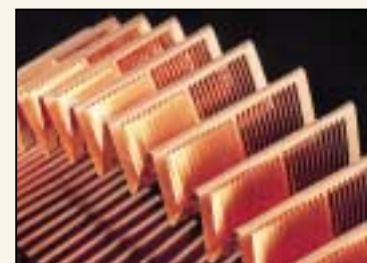
Stay Cool.

“Amplifiers get hot.” Wrong! Because there is Lab.gruppen. Sure, heat is generally a problem because it stresses the components and has led elsewhere to shows ending early. Some amplifiers even go into protection by shutting down completely or by reducing the output power dramatically. We do not create much heat to start with; Lab.gruppen amps are extremely efficient, therefore they generate less heat – more about this later.

SPEED-CONTROLLED FANS

To get rid of the little heat that we produce, we use speed-controlled fans. They move the cooling air from front to rear, because this makes the best sense. The air is directed into a compression chamber, and then guided through the heat sinks. The cooling differs in three distinct ways to common schemes:

Difference #1: Our output transistors are located side-by-side in the airstream, all getting the same cool air at the same time. Not one of them gets hotter due to being positioned at the wrong end of a tunnel. We keep them all cool.



Copper heat sinks with tiny fins.

Difference #2: Our heat sinks offer plenty of surface area, again broken up into tiny little fins. Greater air turbulence = better cooling.

Difference #3: Our heat sinks are made out of copper. Its heat dissipation is many times better than aluminum.

INTERCOOLER®

The result is an ultra-efficient and compact cooling system we call Intercooler®. What you get is an amplifier that stays cool, even if driven hard and for long periods of time. You may also stack as many as you want directly on top of each other without space in between.

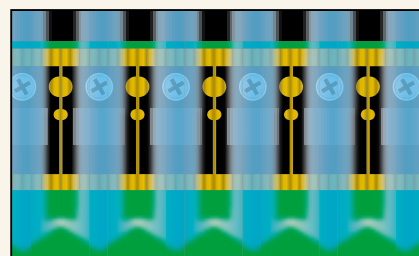
Pure physics and smart engineering. Cool!



The output transistors are located side-by-side in the airstream.



Removable dust filter on the front panel.



The parallel airflow through the Intercooler™.

A Matter of Class.

When it comes to high power we cannot forget about class. You are familiar with Class A/B, Class H, and even Class D.

At Lab.gruppen, we went a step further with our flagship amplifiers – fP 6400 and fP 3400 – and created our own unique Class TD design!

CLASS TD

We have reasons to be proud: our patented Class TD really means a quantum leap in amp design! For high-power amps it proves to be the ultimate solution for all existing compromises.

Class TD combines the reliability and sonic performance of Class A/B and the efficiency of Class D. It avoids many negative side effects, such as the ripple in the audio signal that is a hallmark of a most Class D or PWM output stages.

THE EVOLUTION OF CLASS D

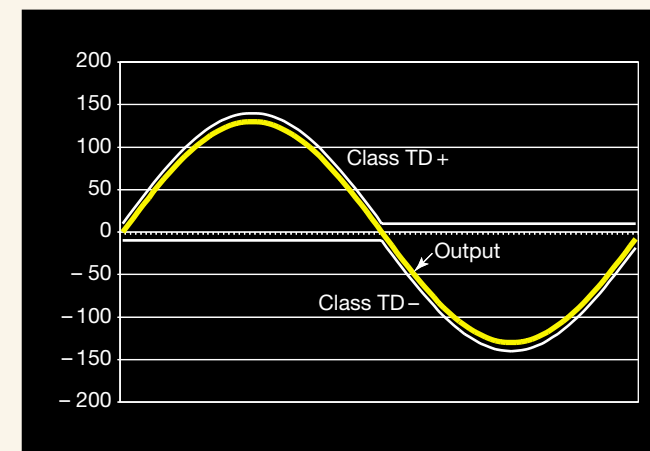
Class TD is ‘the evolution of Class D’, where ‘TD’ indeed, stands for ‘Tracking Class D’. Simply put, the rail voltage

provided by the power supply tracks the audio signal at all frequencies with a little headroom. This process is extremely efficient because only a tiny portion of energy is turned into heat at the output stage.

The output signal is of high quality because of its well-proven Class A/B design. In addition the output is not chopped by high frequency switching.

To make your life even easier, Class TD works perfectly well under all conditions: the amp maintains its flat frequency response with all complex loads down to 2 Ω nominal, it is mono-bridgable, absolutely reliable and it does not interfere with any other RF equipment.

Class does matter, and Lab.gruppen is in a class of its own.



Superb sound quality and high efficiency thanks to Lab.gruppen's Class TD technology!

Losing Weight is Easy.

Others call their amplifiers ‘light-weight’. We make ours lightweight. Don’t read this, if you love to haul big, heavy equipment around!

6400 W – 10 kg / 22 lbs

Our strongest amp – the fP 6400 – supplying 6400 watts, is only 2u high, only 347 mm/14” deep, and weighs only 10 kg/22 lbs. A truly record-breaking power to weight ratio!

Okay, we’ve told you about our efficient weight and space saving Intercooler®. Another factor contributes greatly to achieve such lightweight:

FERRITE TRANSFORMER

Getting rid of the big, heavy iron transformer represents the biggest weight-loss. In substitution we replaced it with our ingenious Regulated Switch Mode Power Supply – read more about it in the next section.

Losing weight without side effects is an art. Our engineers understand this art very well.

All of our focus is directed towards quality. Quality in sound for undisturbed performances. Quality in engineering and workmanship for long-term reliability. Quality and efficiency for ease of use.

IDEAL TOURING AMPS

Lab.gruppen fP Series amplifiers are so light in weight that they are the ideal companions in any touring rack. They

perform so well under the weirdest of conditions that they are the safest possible investment in any permanently installed sound system too. Put both these facts together and you end up with a technical ‘Tour de Force’ capable of outstanding cone control and superlative mid-hi reproduction.

So, losing weight has never been as pleasant and easy.



Lab.gruppen fP Series amplifiers are the ideal companion in your touring rack.

Power is our Business.

SWITCH MODE POWER SUPPLY

Our Regulated Switch Mode Power Supply (R.SMPS) is a masterpiece of engineering and is present in all fP Series amplifiers.

“Regulated?” you ask. Yes, because by using this regulated supply we ensure an excellent audio performance on a par with Hi-fi. From the lowest to the highest output power and with virtually any load you will appreciate the inclusion of our R.SMPS. Yet, the ability to produce transient and undistorted bass is guaranteed.

COMPACT & LIGHTWEIGHT

Lab.gruppen’s R.SMPS is a key element in the products design. Its efficiency is responsible for the amp being compact and light in weight. The transformer is smaller than in a conventional amp – yet, we use a relatively large ferrite transformer (fP = ‘ferrite Power’) because it

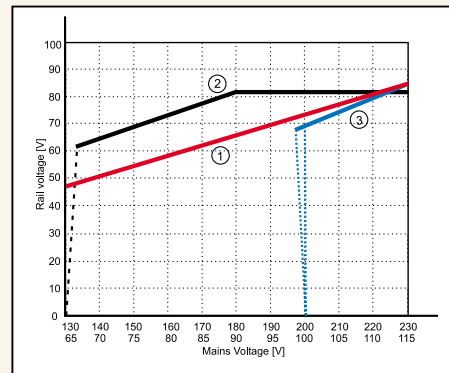
allows for huge magnetic field storage. Our power supply is very efficient too, limiting the amount of current needed from the mains to reasonable values. Hence, there is no risk of the mains fuses/breakers continually popping: the show goes on even at highest power demands!

RELIABLE OUTPUT POWER

‘Real world’ conditions also indicate that all too often the mains voltage drops significantly below nominal levels. You know it happens! Often due to regional problems, unstable generators and long cable runs.

With an fP Series amplifier and its R.SMPS you might not even notice the mains voltage being down by as much as 20 % below nominal; the amp just continues to deliver full output power.

Yes, we are thinking about you when making use of our power.



Rail voltage, depending on mains voltage: Characteristics of different power supplies.

- 1) The rail voltage of a conventional power supply (typically with a toroidal iron transformer) drops proportionally as the mains voltage drops.
- 2) The Lab.gruppen R.SMPS as in the fP Series provides a stable voltage down to mains voltages of 180V (@ 230V nom.) or 90V (@ 115V nom.)!
- 3) The rail voltage of any typical SMPS, as most commonly used elsewhere, drops worst due to semiconductor losses. Current limiting shuts down the supply. Under voltage protection shuts down the supply.

MLS®. Unique Power Management built in*.

Wouldn’t it be great if you could tell an amplifier what load would be at its output? After all, it makes a big difference if the speaker’s impedance is 16 Ω or 2 Ω or anything in between.

MATCHING LOAD SYSTEM

Usually any amplifier is under greater stress when driving low impedance loads, such as 2 Ω. At high power an average amp is likely to run too hot and go into protection and it’ll probably scramble the audio signal too. Not Lab.gruppen’s fP Series amps. MLS® gives you control to manage the amp’s power. MLS® stands for “Matching Load System”. Only Lab.gruppen offers this technology.

The typical scenario: at high impedances such as 8 Ω typically, an average amp delivers a maximum output voltage of 100 V and a maximum output current of 12 A, which equates to 1200 W in output power. Now, when you add a second speaker in parallel the impedance drops to 4 Ω. The amp naturally tries to provide twice as much current (24 A), but it’s not possible. Stress! The amp continues to provide current

beyond its limit, it will get hot and hotter, the signal gets distorted and – hey! – a thermal shutdown.

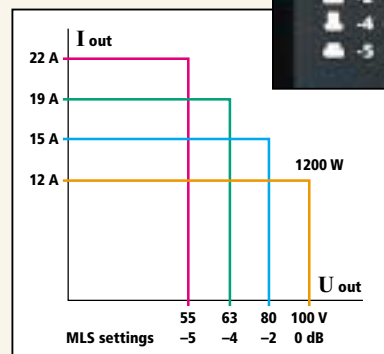
CONSTANT POWER

The relaxing solution: with most fP models you will find MLS® switches*. If these amps have to drive a low impedance load, you may reduce the output voltage by a certain amount of dB. At the same time the voltage/current ratio is “converted”: with a reduced output voltage an MLS® equipped amp delivers more current, resulting in the same output power. Take the equation in the above example: 100 V x 12 A = 1200 W may be converted to 80 V x 15 A = 1200 W. Or 55 V x 22 A = app. 1200 W! The great benefit of MLS® with its unique ‘Constant Power Conversion’ is that at low impedances the amp stays much cooler, is unlikely to run into thermal shutdown and sounds much better!

Since you are in control anyway, you may well use MLS® for different purposes: a reduction of output voltage at higher impedances reduces the total

output power. This way you may protect smaller speakers or HF drivers from being overpowered. Or use the amp properly with bi-amped systems, or make it match your specific application. In fact, with MLS® you buy one amplifier and get many.

Invest little and get more from Lab.gruppen.



Four possible MLS settings of a given amp, each area representing the same amount of output power. Constant power, whichever setting you choose!

*) = In fP 6400, fP 3400, fP 2600 and fP 2400Q.

AFS®. That’s Current Technology, too*.

Take the fP 6400, our strongest amp. Conventional thinking says, “if that amp delivers 6400 watts, then it will draw a current of more than 30 A from a 230 V mains line!” or 60 A from a 115 V line, for that matter. So, you fear that the mains fuse/breaker will pop, ending your show too soon!

So, let’s talk current again, but this time at the mains input of an fP 6400. Mathematically your calculation is correct. However, the strangest musical signal might ask the amp to deliver in average 1/3 of its maximum power; most audio signals require less. The rest of the power provides headroom for dynamic peaks. So, full power is only needed for very short periods. Our R.SMPS power supply with its energy storage is a great buffer for these short peaks. What is left over can be handled well by the mains breaker. Thanks to Lab.gruppen’s efficient amp design, the average mains

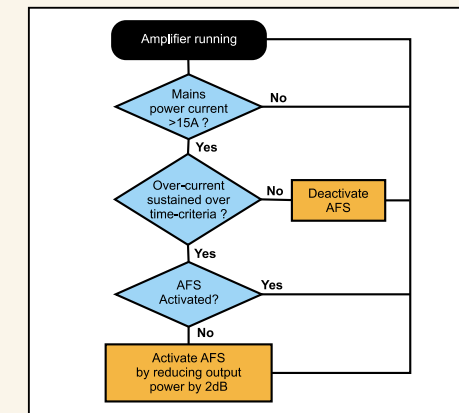
current draw of an fP 6400 is in between 6 A and 14 A @ 230 V or 12 – 28 A @ 115 V, respectively. Now, any standard breaker can handle that!

AFS® – AUTOMATIC FUSE SAVER

AFS® comes into the picture, if the amplifier attempts a higher current draw. Again, in ‘real world’ conditions we have no reports of it being needed. In other situations, e.g. when testing the amp at full power with sine wave signals, AFS® kicks in as an “Automatic Fuse Saver”: it limits the mains current draw to a level where the mains fuse/breaker stays intact.

By the way, AFS® works automatically. **Nothing for you to worry about. Just like so many other things at Lab.gruppen. Currently, and in the future.**

*) = AFS® is only needed and present in fP 6400.



AFS works fully automatic: no action required by the user! Just like any other protection feature in Lab.gruppen amplifiers.

Not at all intriguing: In & Out.

The simple things get often overlooked. Why? We don’t know. So, we decided to make it really simple for you to connect our amplifiers to the outside world.

Neutrik Combo® input connectors adapt to both worlds; XLR or 1/4” phone plugs. Either way, it is a balanced input.

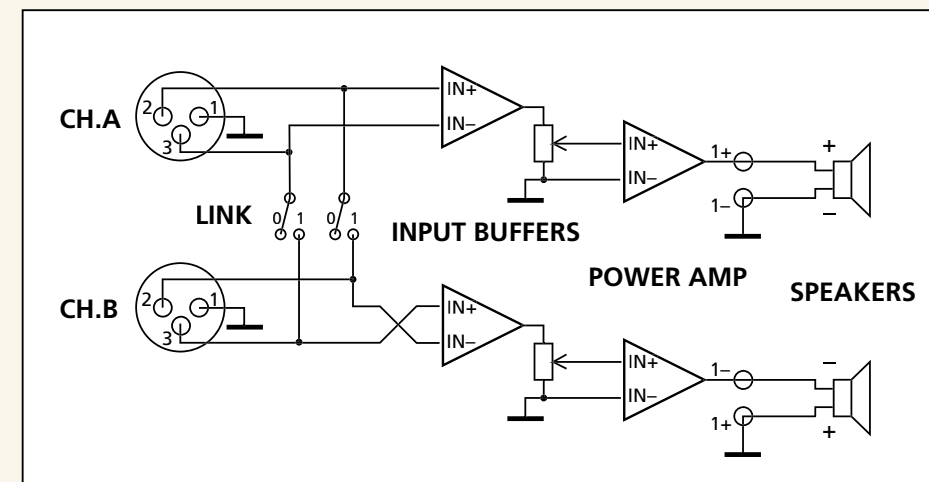
You are more than welcome to link multiple amps together by using the additional male XLR connectors. In case you wanted to link the inputs of the same amplifier, you will not even need an external cable: just flip one switch on the rear panel!

All output signals find their way out through Neutrik Speakon® connectors – safe, and a world standard. Of course, each channel has its own output connector, but to save you from hassling around with adaptors we have also made both channel outputs available on a single Speakon® (except fP 2400Q: four channels, two each into two Speakons®).

We have the proper connections. Please make use of them.



Neutrik Combo® input jacks adapt to both worlds, XLR or 1/4” phone plugs.



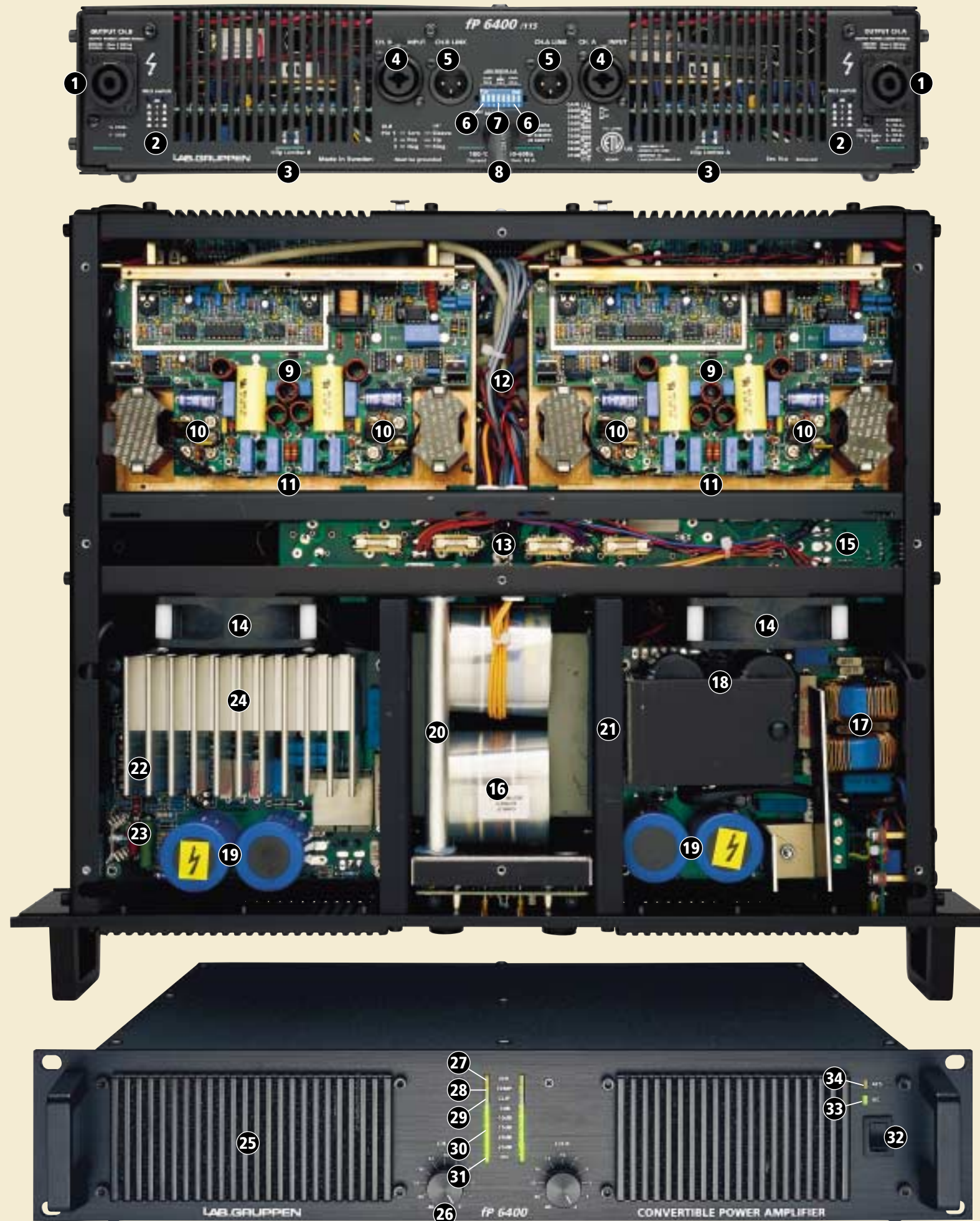
The simple scheme of In & Out.

REAR PANEL

1. Neutrik Speakon® output connectors. Channel A and B: wired pins 1+ and 1-. (Channel B is also present on pins 2+ and 2- in the Channel A connector.)
2. Minimum Load System (MLS®) switches.
3. Clip Limiter switch (bypass).
4. Electronically balanced inputs (Neutrik Combo® XLR jacks).
5. Link outputs (XLR male jacks).
6. Multiple Gain Switches. Setting gain for both channels individually from 20 dB to 41 dB in 3 dB steps.
7. Link and Bridge switches.
8. Mains power cord. Approvals: CE, ETL and CSA (UL standards).

FRONT PANEL

25. Removable clip-on dust filters.
26. Input level attenuators.
27. Protection indicators.
28. Over-temperature indicators.
29. Clip indicators.
30. LED bar indicating the output level.
31. Power ON indicator.
32. Mains power switch.
33. AC indicator, showing if AC line voltage is present.
34. AFS protection indicator.



TOP VIEW

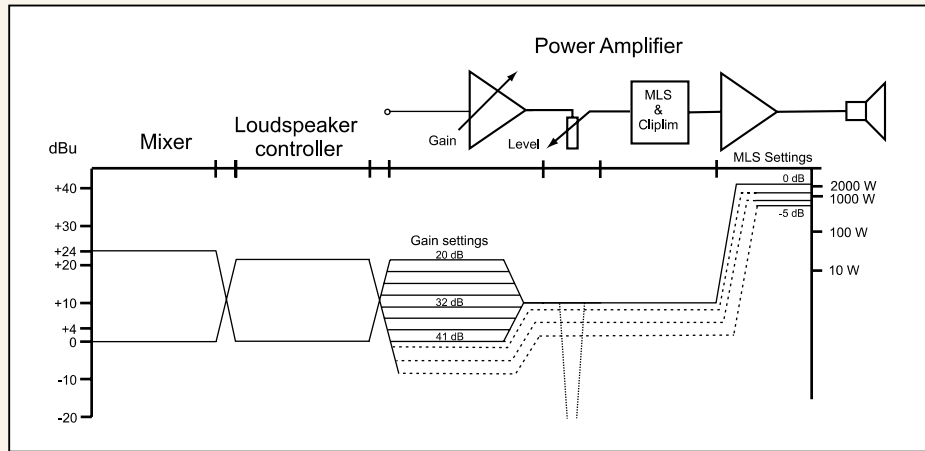
9. Class TD: "Tracking Class D" power converter.
10. 50 A switching MOS transistors operating at 800 kHz.
11. Intercooler® cooling system made out of copper.
12. Linear Class AB power amplifier, ensures low noise and low distortion.
13. 160 V DC tank capacitors.
14. Cooling fans, controlled in speed proportionally to temperature.
15. Low voltage regulator.
16. Massive ferrite transformer stores magnetic energy.
17. Mains power line RFI-filter.
18. 160 V DC tank capacitors.
19. Primary tank capacitors.
20. Faraday's tube.
21. Fast Recovery Epitaxial rectifiers.
22. Regulated Switch Mode Power Supply control processor.
23. Output power adjustment.
24. Insulated Gate Bipolar Transistor Array Cooler.

Gain Knowledge.

A professional amplifier should fit nicely into any sound system. The reality is that some fit better than others. Lab.gruppen fP Series amplifiers fit the best.

When playing together with other equipment the critical question is the gain structure of the system. There are various ways of dealing with it. The Lab.gruppen way is simple but also the most flexible. On the rear panel you will find the Multiple Position Gain Switch. Pick one out of eight gain settings between 20 dB and 41 dB. High gain = high input sensitivity, and vice versa. Eight steps to get to proper headroom. Eight chances to reduce the risk of clipped signals. Eight possibilities to enjoy the full output power of a Lab.gruppen amplifier. And eight great opportunities to adjust perfectly to the gain requirements of virtually any loudspeaker system controller! All available at the flip of a switch.

Lab.gruppen love to share their gained knowledge with you.



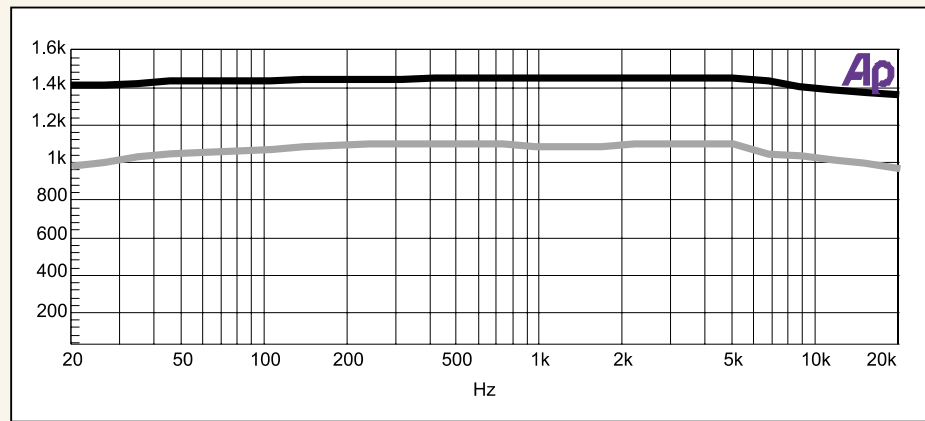
Gain structure.

Power and Power is not the same.

Looking at power specifications of amplifiers, your first question should always be: "For how long?" Did you know that a professional amplifier should be able to provide 1/3 of its nominal maximum output power for at least one hour? That's not our words, but it was the 'Federal Trade Commission' (FTC), an independent organization, stating this on purpose to protect you, dear User, from spending your money on unprofessional equipment. Most average amplifiers are only able to deliver 1/8 of their quoted power for no fewer than a couple of minutes; beyond that they go into thermal shutdown due to overheating.

Needless to say, Lab.gruppen fP Series amplifiers are conservatively 'FTC rated'. Meaning they perform at more than 1/3 of their nominal power and over a longer period of time than one hour. We do what we quote and we quote what we do. Why else would we call our amps 'professional'?

Expect the extreme from Lab.gruppen.



Proof; our R.SMPS provides more sub-bass! Upper curve; fP 3400, R.SMPS, Class TD. Lower curve; conventional amp, toroidal transformer, Class H.

This is not the frequency response, but the power bandwidth showing the maximum power over frequency at less than 1% THD. Versus the fP 3400, which remains almost even, the conventional amp drops down in LF! While in this example the conventional amp is considered to be "one of the best sub-bass amps" in the industry, you can tell: the fP is even better!



Protect Yourself?

When working with a Lab.gruppen fP Series amplifier, all necessary protection is already built in to prevent damage to your amp and as much as possible to your speakers as well. All protection circuitry has an automatic reset, so you do not need to worry, or take any action.

THERMAL PROTECTION

Should you – against all odds – manage to overheat the amp, the Thermal Protection will mute the affected amp channel until it has cooled down.

ALS®

Our smart ALS® is an 'Adaptive Limiting System' that monitors the output signal continuously to limit its current dynamically, depending on your choice of MLS® setting.

If for any reason distortion above 1 % THD appears between input and output of an amp channel, a Clip Limiter will reduce the signal proportionally. You only need to make sure that the input signal is 'clean'. The Clip Limiter is the only protection that you can manually defeat using recessed switches on the rear.

VHF PROTECTION

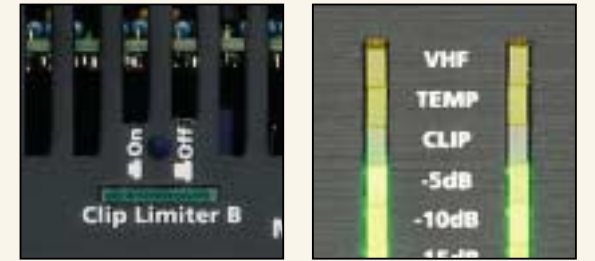
To protect your HF drivers from any oscillation, the VHF Protection will mute the amp once a signal above 12 kHz is present at the amp's output for more than five seconds.

AC MAINS VOLTAGE PROTECTION

fP Series amps have an extremely wide window of operation where mains voltage is concerned; however, in the case of the mains voltage being below or above the window of operation, the amplifier will mute itself thanks to its AC Mains Voltage Protection.

Naturally, all Lab.gruppen amps are DC and Short Circuit protected.

Average life is risky enough. Audio is safe with Lab.gruppen.



Recessed bypass switch per channel for the clip limiter.

Indicators for VHF and temperature protection.



High-frequency drivers are well protected by the automatic VHF-protection.

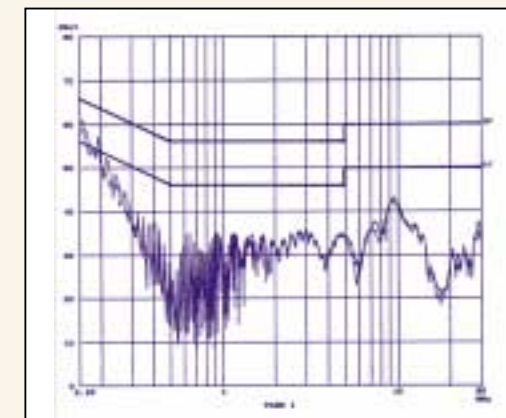


We only make Amplifiers.

We do not make receivers or transmitters. From the early days that we were making Switch Mode amplifiers, we always complied with any emission and immunity requirements, including today's tough European Electro-Magnetic Compatibility directive (EMC).

With Lab.gruppen fP Series amplifiers you do not need to fear any interference with RF equipment. If you hear strange voices please check elsewhere.

You're not alone. When it comes to power amps, Lab.gruppen is on your side.



RF emission from an fP 2200 (lower curve), staying way below the IEC limits (upper lines).



Lab.gruppen's EMC test facilities. 8,000 volts are being "shot" with this gun for testing!



The very finest test equipment is made in-house; here is a coil for measuring the hum field.

fp 6400

Power specifications: stereo 8 ohms 4 ohms 2 ohms
EIA at 1 kHz and 1% THD 1300 W 2300 W 3200 W

- ◆ Class TD
- ◆ MLS® Matching Load System
- ◆ Multiple Position Gain
- ◆ Intercooler®, speed-controlled fans
- ◆ Weight: 10 kg (22 lbs)
- ◆ Dimensions: 2 RU x 347 mm (13.7")



fp 3400

Power specifications: stereo 8 ohms 4 ohms 2 ohms
EIA at 1 kHz and 1% THD 1100 W 1500 W 1700 W

- ◆ Class TD
- ◆ MLS® Matching Load System
- ◆ Multiple Position Gain
- ◆ Intercooler®, speed-controlled fans
- ◆ Weight: 10 kg (22 lbs)
- ◆ Dimensions: 2 RU x 347 mm (13.7")



fp 2600

Power specifications: stereo 8 ohms 4 ohms 2 ohms
EIA at 1 kHz and 1% THD 430 W 840 W 1200 W

- ◆ MLS® Matching Load System
- ◆ Multiple Position Gain
- ◆ Intercooler®, speed-controlled fans
- ◆ Weight: 8 kg (18 lbs)
- ◆ Dimensions: 2 RU x 287 mm (11.3")



fp 2200

Power specifications: stereo 8 ohms 4 ohms 2 ohms
EIA at 1 kHz and 1% THD 350 W 650 W 1100 W

- ◆ Multiple Position Gain
- ◆ Intercooler®, speed-controlled fans
- ◆ Weight: 7.9 kg (17 lbs)
- ◆ Dimensions: 2 RU x 287 mm (11.3")



fp 2400Q

Power specifications: 4 ch. 8 ohms 4 ohms 2 ohms
EIA at 1 kHz and 1% THD 370 W 380 W 640 W

- ◆ MLS® Matching Load System
- ◆ Intercooler®, speed-controlled fans
- ◆ Weight: 8.6 kg (19 lbs)
- ◆ Dimensions: 2 RU x 316 mm (12.4")



Technical Data.

	fp 6400	fp 3400	fp 2600	fp 2200	fp 2400Q Four channels
Max output power¹⁾ EIA at 1 kHz and 1 % THD, MLS in 0 dB position					
8 Ω per channel	1300 W	1100 W	430 W	350 W	370 W
4 Ω per channel	2300 W	1500,1900 ²⁾ W	840 W	650 W	380, 700 ²⁾ W
2 Ω per channel	2900, 3200 ²⁾ W	1700, 3000 ²⁾ W	1200, 1540 ²⁾ W	1100 W	640 ²⁾ W
8 Ω bridged	4600 W	3000 W	1680 W	1400 W	760 ³⁾ W
4 Ω bridged	5800 W	3400 W	2400 W	2200 W	1280 ²⁾ 3) W
Max output voltage					
8 ohms load	104 V _{rms}	94 V _{rms}	59 V _{rms}	53 V _{rms}	54 V _{rms}
Peak voltage, no load	149 V	132 V	85 V	77 V	81 V
Distortion etc.					
THD 20 Hz – 20 kHz and 1 W to full power	0.1 %	0.08 %	0.04 %	0.03 %	0.07 %
THD at 1 kHz and 1 dB below clipping	0.04 %	0.03 %	0.01 %	0.006 %	0.02 %
DIM 30 at 3 dB below clipping	0.06 %	0.06 %	0.008 %	0.008 %	0.008 %
Hum and noise	< -110 dB	< -110 dB	< -110 dB	< -110 dB	< -107 dB
Channel separation at 10 kHz	70 dB	70 dB	70 dB	70 dB	70 dB
Output impedance					
Slew rate	60 mΩ 20 V/μs	60 mΩ 20 V/μs	30 mΩ 60 V/μs	30 mΩ 40 V/μs	30 mΩ 60 V/μs
Inputs					
Gain selectable	20, 23, 26, 29, 32, 35, 38, 41	20, 23, 26, 29, 32, 35, 38, 41	20, 23, 26, 29, 32, 35, 38, 41	20, 23, 26, 29, 32, 35, 38, 41	32
Impedance	20 kΩ	20 kΩ	20 kΩ	20 kΩ	20 kΩ
Common mode rejection	50 dB	50 dB	50 dB	50 dB	50 dB
Front panel					
Gain controls	31 pos detent	31 pos detent	31 pos detent	31 pos detent	31 pos detent
Indicators per channel:					
Clip	Red LED	Red LED	Red LED	Red LED	Red LED
Output headroom indicators	5 green LED's	5 green LED's	5 green LED's	5 green LED's	2 green LED's
Protect (Short & VHF)			Yellow LED	Yellow LED	
Protect (Short, temp & VHF)					Yellow LED
VHF	Yellow LED	Yellow LED			
Over temperature	Yellow LED	Yellow LED	Yellow LED	Yellow LED	
Rear panel					
Input connectors	Neutrik Combo	Neutrik Combo	Neutrik Combo	Neutrik Combo	Neutrik Combo
Link connectors	XLR male	XLR male	XLR male	XLR male	N/A
Clip limiters	On/Off, each ch.	On/Off, each ch.	On/Off, each ch.	On/Off, each ch.	On/Off, each ch.
MLS switch	0, -2, -4, -5 dB	0, -2, -4, -5 dB	0 or -3 dB	N/A	0 or -3 dB
Link switch	Ch. A-B	Ch. A-B	Ch. A-B	Ch. A-B	Ch. A-B, B-C, C-D
Power					
Operation voltage, 230V/115V	130-265V/65-135V	130-265V/65-135V	130-265V/65-135V	130-265V/65-135V	130-265V/65-135V
Soft Start	Yes	Yes	Yes	Yes	Yes
Peak inrush current	5 A	5 A	5 A	5 A	5 A
Full output power at 4 ohms, 230V/115V	180-265V/90-130V	180-265V/90-130V	180-265V/90-130V	180-265V/90-130V	180-265V/90-130V
Minimum start-up voltage, 230V/115V	175V/95V	175V/95V	175V/95V	175V/95V	175V/95V
230 V or 115 V versions	Yes	Yes	Yes	Yes	Yes
Current draw at 4 Ω and 230V/115V					
Idle, no load at output	1.0/2.0 A _{rms}	1.0/2.0 A _{rms}	1.0/2.0 A _{rms}	0.9/1.8 A _{rms}	1.4/2.8 A _{rms}
1/8 of full power (-9 dB)	6/12 A _{rms}	5/10 A _{rms}	6/12 A _{rms}	5/10 A _{rms}	6/12 A _{rms}
1/3 of full power (-5 dB)	14/28 A _{rms}	11/22 A _{rms}	9/18 A _{rms}	8/16 A _{rms}	9/18 A _{rms}
At full power (0 dB) at 1 kHz 1 % THD	20/40 A _{rms}	26/52 A _{rms}	16/32 A _{rms}	14/28 A _{rms}	16/32 A _{rms}
Dimensions					
Width	483 mm (19")	483 mm (19")	483 mm (19")	483 mm (19")	483 mm (19")
Height	88 mm (3.5")	88 mm (3.5")	88 mm (3.5")	88 mm (3.5")	88 mm (3.5")
Depth	347 mm (13.7")	347 mm (13.7")	287 mm (11.3")	287 mm (11.3")	316 mm (12.4")
Weight	10.0 kg (22 lbs)	10.0 kg (22 lbs)	8.0 kg (18 lbs)	7.9 kg (17 lbs)	8.6 kg (19 lbs)
Approvals:					
CE : Emission: EN 55 103-1, E3 Immunity: EN 55 103-2, E3, with S/N below 1 % at normal operation level Safety: EN 60 065, class 1					
ETL listed: Conforms to ANSI/UL STD 6500 and Certified to CAN/CSA E60065-00					
FCC: Complies with Class B digital device, Part 15 of the FCC Rules					
			1) Specifications measured with 230 V AC.		
			2) Continuous power, one channel driven or peak power both channels driven. (Thermal protection may occur at continuous high power.)		
			3) Per bridged channel pair. Channels A/B and C/D may be bridged independently.		
			Lab.gruppen reserve the right to alter functions or the specifications without prior notice.		



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