product specifications

Lab.gruppen **fP 6400**

The fP 6400 is a lightweight and space-saving power amplifier

Heat and cooling are fundamental problems in extreme high power amplifiers such as the fP 6400. Already in 1990, Lab.gruppen patented a high efficiency amplifier, in fact an evolution of the Class D amplifier. Lab.gruppen therefore call it Class TD. It obtains the same high efficiency as Class D, but avoids its drawbacks. Class D has a power-amplifier topology using Pulse Width Modulation (PWM) to achieve high efficiency, but it needs a recovery
filter between the output stage and the loudspeaker. Lab.gruppen's Class TD amplifiers do not need this filter and this is one reason why the Lab.gruppen Class TD obtains the same sonic quality as a traditional Class AB amplifier.
Besides the traditionally superb Lab.gruppen sonic performance, fP6400 offers a full line of important features:

Regulated switch mode power supply

Today there are many lightweight, switch-mode amplifiers in the market. However, the unique Lab.gruppen switch-mode power supply technology
offers a number of essential advantages that make it superior to other and seemingly similar power supply designs. The most important features are the regulated power supply and the extreme power efficiency. The regulated
power supply easily deals with a very high variation in the AC mains voltage: it can drop by up to 20% below its nominal level – e.g. to 180 V instead of 230 V – without any problem. Perhaps even greater benefits result from the
extreme efficiency of Lab.gruppen amplifiers: only a fraction of the energy from the AC mains is turned into heat.
A regulated power supply also presents some other sonic advantages, such as better cone control and the same fast response as a conventional power supply.

Multiple positions Gain switch

To meet the demands for a flexible gain structure in the system, Lab.gruppen offers a multiple position gain switch. The maximum amplifier gain can be set to all industry standards: 20, 23, 26, 29, 32, 35, 38 and 41 dB.

Sophisticated protection circuitry, combining:

- **DC protection;** protects against infrasonic signals
- **VHF protection;;** protects the loudspeakers against strong very high frequency non-musical signals above the audible range.
- **Thermal protection;** prevents the amplifier from being overheated. The protection indicators on the front panel are switched on, as a warning, before the protection process is initiated.
- **AC protection**; shuts down the power supply if the line voltage is outside the operating voltage.
- **Clip limiter**; prevents severely clipped waveforms from reaching the loudspeakers, whilst maintaining full peak power.

technical specifications

MAX OUTPUT POWER 1)					
EIA at 1 kHz and 1% THD					FTC 20-20kHz @0.1%THD
MLS switch	-5 dB	-4 dB	-2 dB	0 dB Full	0 dB Full
16 Ω per channel	220 W	260 W	410 W	650 W	640 W
8 Ω per channel	430 W	520 W	820 W	1300 W	1280 W
4 Ω per channel	830 W	1000 W	1600 W	2300 W	2200 W
2 Ω per channel	1660 W	2000 W	2400, 3050 3) W	2900 2), 3200 3)W	2500 W
16 Ω bridged 860 W	1040 W	1640 W	2600 W	2500 W	
8 Ω bridged 1660 W	2000 W	3200 W	4600 W	4400 W	
4 Ω bridged	3400 W 4000 W	4800, 6100 3) W	5800 2), 6400 3) W	5000 W	
Max output voltage					
8 ohms load	62 Vrms	70 Vrms	85 Vrms	104 Vrms	
Peak voltage, no load	88 V	101 V	121 V	149 V	
Distortion etc.					
THD 20Hz-20kHz					
and 1W to full power		0,1 %			
THD @ 1kHZ and –1dB					
under clip		0,04 %			
DIM 30 at –3dB under clip					0,06 %
Hum and Noise		<-110 dB			
Channel separation @10kHz		70 dB			
Output impedance		60 mΩ			
Slew Rate		20 V/µs			
Inputs					
Gain, selectable [dB]		20, 23, 26, 29, 32, 35, 38, 41			
Impedance					20 ohm
Common mode rejection		50 dB			

technical specifications

Front Panel			
Gain controls		(2) channel A, B	31 pos detent
Clip Indicator		(2) red LEDs	
Output headroom indicators	(10) green LED's	Fast peak –slow release	
Temp Indicator	(2) yellow LEDs	80°C at heatsink	
VHF indicator		(2) yellow LEDs	<12kHz at full power
On Indicator		(2) green LEDs	DC rail voltage for channel A and B
AC Indicator		(1) green LED	AC power present
AFS Indicator		(1) green LED	Fuse saver activated
Rear Panel			
Input connectors		(2) Neutrik Combo XLR type, 3 pin & 1/4" jack	
Link connector		(2) XLR type, 3 pin male	
Output connectors		(2) Neutrik 4-pole Speakon connectors	
Switches			
Clip limiter A and B		On-Off (switchable)	
MLS switch		0, -2, -4, -5dB	
Link-switch		Ch.A-B	
Power		230 V version	115 V version
Operation voltage		130 V-265 V AC	65 V – 135 V AC
Minimum start voltage		175 V	95 V AC
Full output power at 4ohms		180 V-265 V AC	90 V – 130 V AC
Peak inrush current (Soft start limited)		5 A	5 A
Current Draw @ 4ohms & 230V			
Quiescent power (no load)		1 Arms	2 Arms
1/8 of full power (-9dB)		6 Arms	12 Arms
1/3 of full power (-5dB)		14 Arms	28 Arms
At full power (0 dB) @1 kHz 1% THD		20 Arms (AFS limited)	40 Arms (AFS limited)
Net Dimensions mm (inch)		483 (19") W x 88 (3,5") H x 347 (13,7") D	
Shipping Dimensions mm (inch)		560 (22") W x 180 (7.1") H x 500 (19.7") D	

technical specifications

Net Weight		10 kg (22lbs)
Shipping Weight		11.6 kg (25.6lbs)
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 I

- Specifications measured with 230 VAC
- Component tolerance dependent 4) Normal operation level 1/8 of full power or – 9dB below clip level
- Continuous power, one channel driven or peak power both channels driven (Thermal protection may occur at high continuous power)
- Normal operation level 1/8 of full power or –9dB below clip level.

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