

CPS 3 / CPS 4

CONTRACTOR PRECISION SERIES

IMPORTANT SAFETY INSTRUCTIONS



WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK,
DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.
AVIS: RISQUÉ DE CHOC ELECTRIQUE. NE PAS OUVRIR.



The lightning flash with arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a damp cloth.
7. Do not block any of the ventilation openings.
Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
9. Only use attachments/accessories specified by the manufacturer.
10. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

For US and CANADA only:

Do not defeat the safety purpose of the grounding-type plug. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

IMPORTANT SERVICE INSTRUCTIONS

CAUTION: These servicing instructions are for use by qualified personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the Operating Instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

1. Security regulations as stated in the EN 60065 (VDE 0860 / IEC 65) and the CSA E65 - 94 have to be obeyed when servicing the appliance.
2. Use of a mains separator transformer is mandatory during maintenance while the appliance is opened, needs to be operated and is connected to the mains
3. Switch off the power before retrofitting any extensions, changing the mains voltage or the output voltage.
4. The minimum distance between parts carrying mains voltage and any accessible metal piece (metal enclosure), respectively between the mains poles has to be **3 mm** and needs to be minded at all times.
The minimum distance between parts carrying mains voltage and any switches or breakers that are not connected to the mains (secondary parts) has to be **6 mm** and needs to be minded at all times.
5. Replacing special components that are marked in the circuit diagram using the security symbol (Note) is only permissible when using original parts.
6. Altering the circuitry without prior consent or advice is not legitimate.
7. Any work security regulations that are applicable at the location where the appliance is being serviced have to be strictly obeyed. This applies also to any regulations about the work place itself.
8. All instructions concerning the handling of **MOS** - circuits have to be observed.

Note:  **SAFETY COMPONENT (HAS TO BE REPLACED WITH ORIGINAL PART ONLY)**

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DESCRIPTION

First of all, we would like to express our thanks and at the same time congratulate you on the decision to buy one of our CONTRACTOR PRECISION SERIES power amplifiers.

Electro-Voice CONTRACTOR PRECISION SERIES amplifiers are made to meet the highest requirements of any on-the-road application. Thus they provide on-board protection against thermal and capacitive overload, short-circuit and the occurrence of HF or DC at the output. Additionally, special circuitry prevents the output-stage transistors from being damaged by Back-EMF. During soft start, delayed switching of the power outputs is accomplished via relays and a limiter controls the initial current inrush, preventing the mains fuse from being blown during the power-on operation.

The mechanical construction as well is carried out following the highest precision standards of the industry. The robust steel chassis provides extreme rigidity and it is meant to live through any hard wearing condition of a touring application. Thermal stability is guaranteed by two 4-Mode silently running fans that offer the possibility to also use the amplifiers in a studio environment.

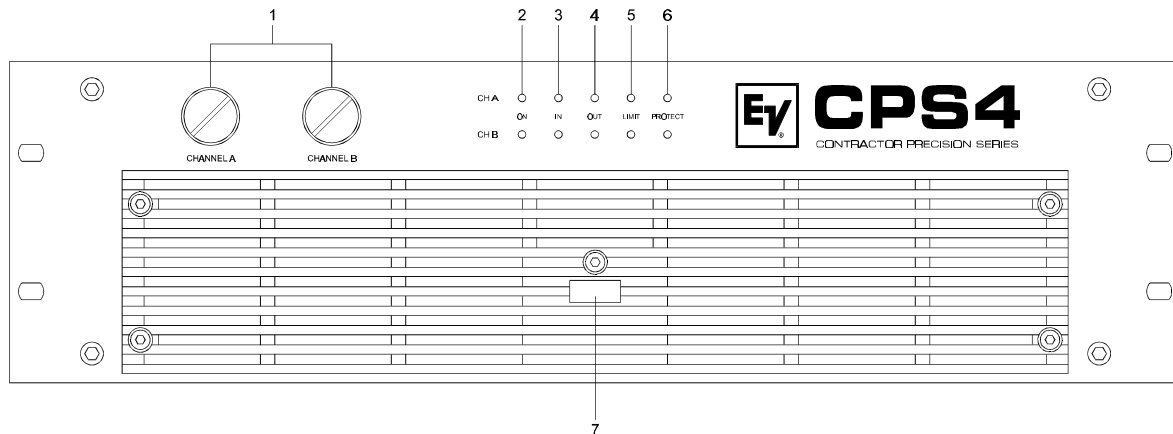
The extensive comparator circuitry constantly monitors the input and output signals and activates the internal limiters whenever a non-linear operational state is encountered. This provides reliable protection of the connected loudspeaker systems against overload and clipping. The sound quality of the CONTRACTOR PRECISION SERIES power amplifiers is superb. Using comprehensive dimensioned power supply units with low-interference toroidal transformers gains a headroom that exceeds the nominal power handling capacity by far. No V/I-Foldback-Limiter circuits are employed within the power amplifiers, making it possible to operate the amps on complex loads up to $\pm 90^\circ$ phase angles without a problem.

The input facilities are carried out as balanced XLR-type sockets while the Direct-Outs – on which the carried-through signals are present – come as XLRM-type connectors. Using the Input Routing-switches lets you determine if the CONTRACTOR PRECISION SERIES amplifiers are operated in DUAL (stereo) or PARALLEL (monaural) mode; “mono-bridged” operation is also possible.

The dB-scaled level controls are to be found on the rear panel. These potentiometers guarantee precise and reliable operation. The easy readable LED display offers quick optical information on the power amplifiers’ momentary operational mode. For each channel individually the display shows whether they are operational, a signal is present at the outputs, when the limiters are activated, and whether one of the protection circuits has been engaged or not. The power outputs CHANNEL A, CHANNEL B and BRIDGED OUT are carried out as Speakon connectors. A ground-lift switch that separates the enclosure from the appliance’s ground potential and therefore helps to eliminate ground noise loops and the mono bridged mode switch are also located on the rear panel. In normal operation all CONTRACTOR PRECISION SERIES power amplifiers can be used to drive loads down to 2 ohms; in bridged mode the minimal load is 4 ohms. All amps are equipped with extremely silent running fans providing front-to-rear air circulation, guaranteeing trouble-free operation even in smaller power amplifier rack systems.

Studying this owner’s manual carefully will provide you with further and more detailed information about the CONTRACTOR PRECISION SERIES power amplifiers. Thus we recommend to keep on reading, assuring you that the Electro-Voice CONTRACTOR PRECISION SERIES power amplifiers will provide you with a lot of fun and satisfaction in your work.

FRONT PANEL



1. Level Control

To prevent unauthorized operation of the level controls on the CPS3 and CPS4, they are provided with screwed-on protective cover lids. When shipped from the factory, the detented potentiometers are set to their clockwise limits. Thus, the input signal is not attenuated. In case matching the input levels is required, you first have to detach (unscrew) the cover lids to gain access to the potentiometers.

2. POWER ON INDICATION

This LED lights up when the mains switch is pressed. If it does not light up, the unit is not connected to the mains or the mains fuse has blown.

3. INPUT INDICATION

This LED lights up if a signal is present at the power amplifier input. The indicator does not light up when the input controls are turned down completely.

4. OUTPUT INDICATION

This LED lights up if a signal is present at the power amplifier output. The indicator goes off when the speaker line has shorted or a protective circuit has been activated thus indicating that there is no signal at the speaker output terminals.

5. LIMIT

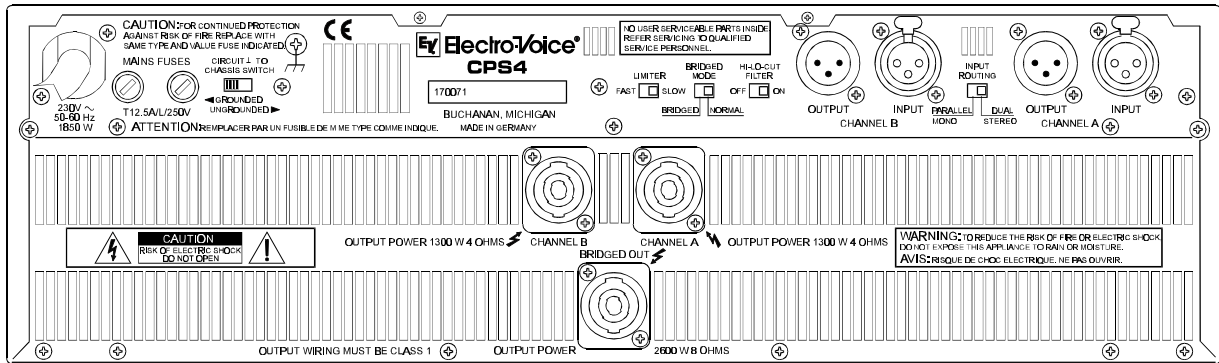
This LED lights up if the limiter has been activated and the power amplifier is being operated at the clip level. If the LED flashes briefly, this is not a cause for concern. If this LED is lit permanently, the volume should be reduced to avoid overload damages to the connected loudspeaker systems.

6. PROTECT

When this LED lights up during operation, one of the protection circuits against over-temperature, overload, shorted outputs, radio frequency interference or DC faults has been triggered. The cause of the error e.g. a shorted loudspeaker line must be remedied. In case of overheating, wait a little until the amplifier switches back to operating mode itself.

7. POWER Switch

The unit is switched on via the power switch. The loudspeaker outputs are switched on via delayed relays so that no startup transients are audible. A current limiter prevents startup peaks on the mains line and prevents the mains fuse from blowing.

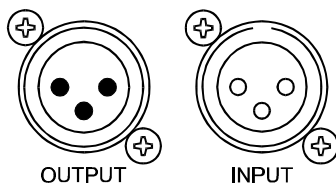


POWER AMPLIFIER INPUTS

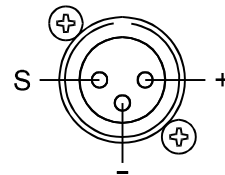
Parallel to the XLR-type inputs, output connectors are provided, offering the opportunity to feed additional power amplifiers with the same signal.

The inputs are electrically balanced with pin-assignment according to the IEC 268 standard.

Pin-assignment of the XLR-type input connectors:

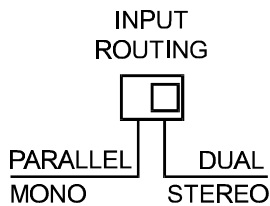


- PIN 1: SHIELD
- PIN 2: a, +
- PIN 3: b, -



Input sensitivity is factory set to 0 dBu.

The power amplifier can be set internally to +6dBu input sensitivity or to +26dBu gain.



INPUT ROUTING

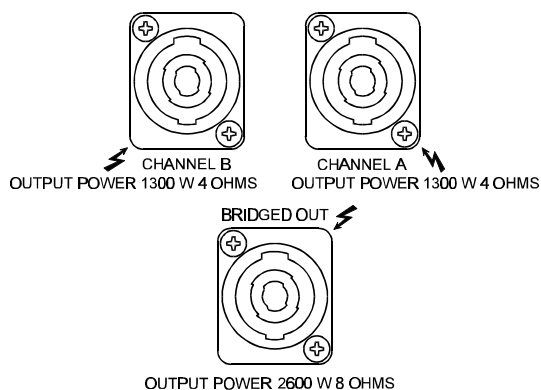
PARALLEL MONAURAL

Setting the selector switch to the PARALLEL/MONO position puts the channel A and channel B inputs in electrically direct parallel configuration, leaving you still the possibility to control the channels' level settings separately, using the output controls A and B.

DUAL STEREO

When the selector switch is set to its DUAL/STEREO position both channels are amplified individually.

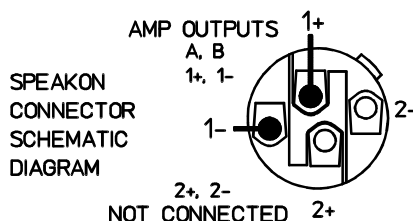
REAR PANEL



POWER AMPLIFIER OUTPUT CONNECTORS

SPEAKON output connectors are provided for the power amplifier channels A (left) and B (right).

The Bridged Out Connector for bridged operation is sealed with a plastic cover to prevent connection errors.

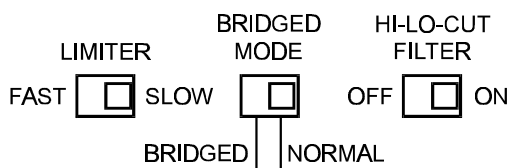


LIMITER

The time constant of the built-in limiter to avoid overdriving is adjustable. Position "SLOW" is the factory preset and this should also be the normal position.

If the power amplifier is used as a MID/HI-frequency amplifier in active multi-way systems, the limiter switch should be set to "FAST".

If the power amplifier is used as LOW-frequency amplifier in active multi-way systems, the limiter switch should be set to "SLOW".



BRIDGED MODE

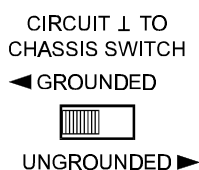
Slide switch to change from Normal Stereo mode to Bridged mode. In Bridged mode the built-in power amplifiers operate in "push-pull" and the double output voltage from channel A and B appears at the Bridged output connector. The phases of Channel A and B are in opposite and therefore the individual channels must not be used as loudspeaker outputs.

HI-LO-CUT FILTER

This filter attenuates subsonic and high frequency signals so that the power amplifiers are not modulated with these signals. This switch should normally always be in position ON. The OFF position is only for applications where an upstream unit, e.g. a crossover or a equalizer, has integrated HI-Cut and LO-Cut filters.

GROUNDLIFT SWITCH

Hum loops can be avoided with the groundlift switch. If the power amplifier is operated together with other units in one 19" rack, the switch should be in GROUNDED position. If the power amplifier is used with units which have different earthing potentials, the switch should be adjusted to the UNGROUNDED position.



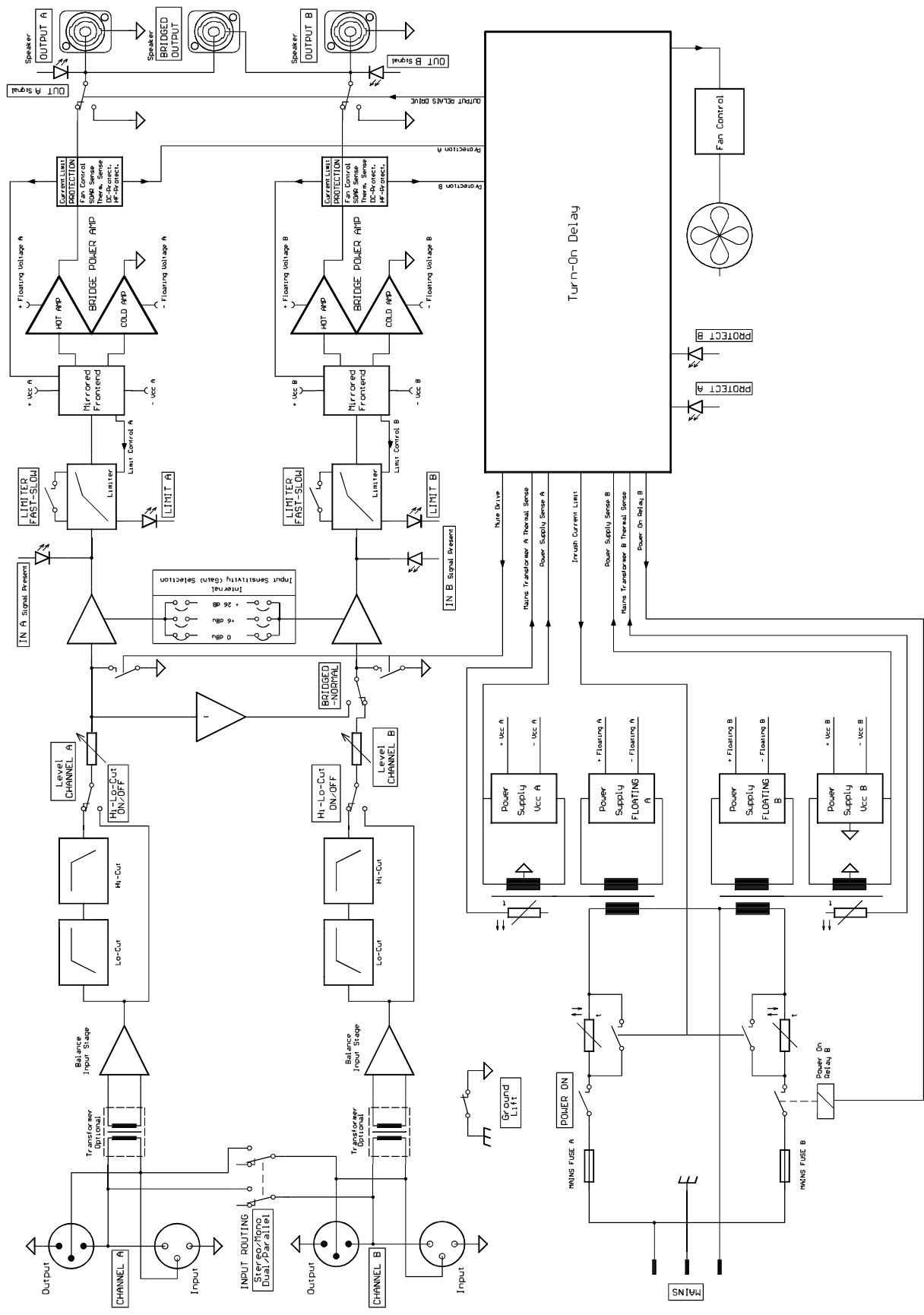
SPECIFICATIONS

Technical Specifications: CPS3, CPS4

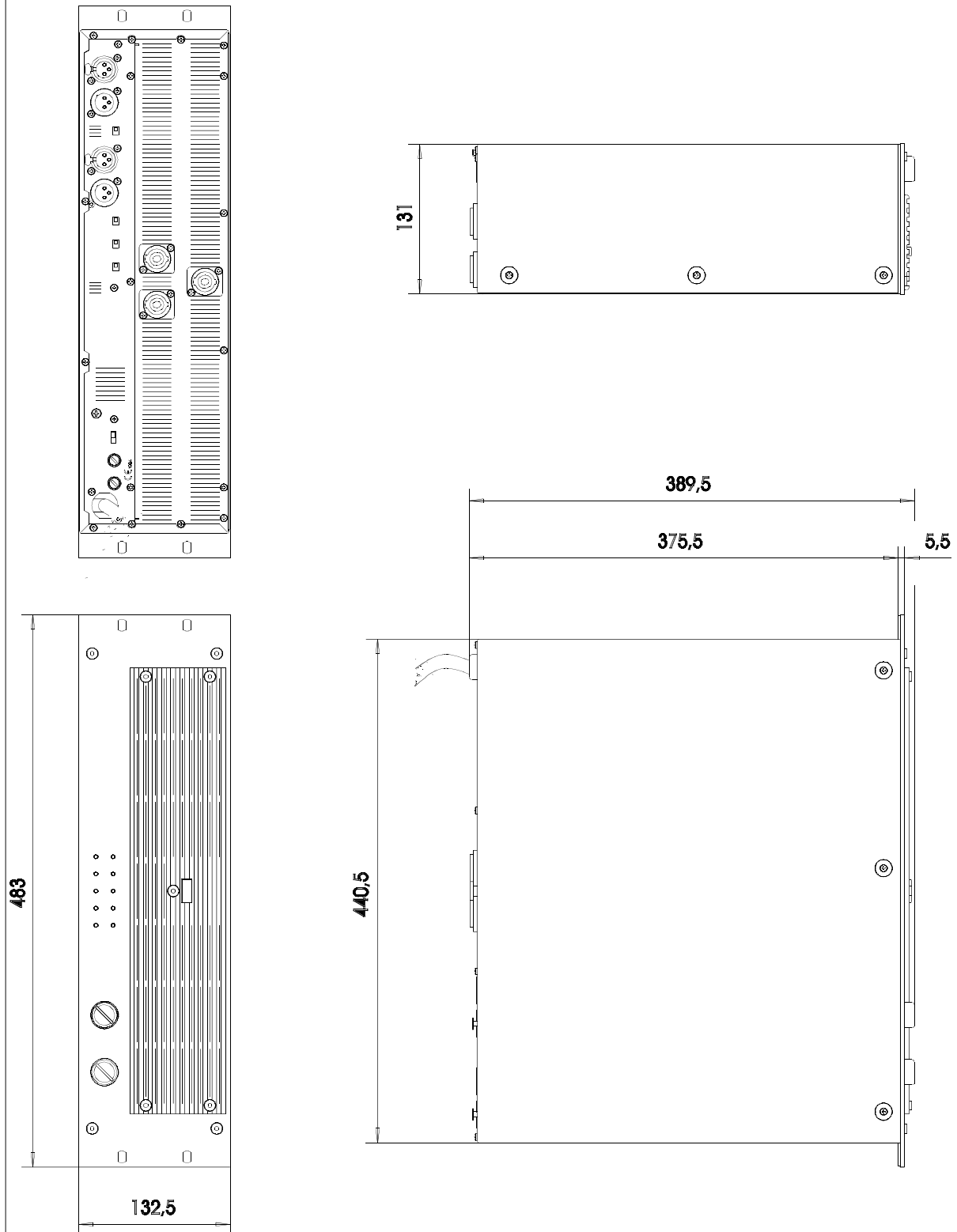
Amplifier at rated conditions, both channels driven with 8 ohms loads, unless otherwise specified.

	CPS3			CPS4		
	8 Ω	4 Ω	2 Ω	8 Ω	4 Ω	2 Ω
Load Impedance						
Maximum Midband Output Power THD=1%, 1kHz	560W	900W	1200W	850W	1300W	1800W
Rated Output Power THD< 0.1%, 20Hz ... 20kHz	500W	800W	1000W	750W	1200W	1500W
Maximum Bridged Output Power THD=1%, 1kHz	1800W	2400W	————	2600W	3600W	————
Maximum RMS Voltage Swing THD=1%, 1kHz		72V			91V	
Voltage Gain at 1 kHz		37dB			39dB	
Slew Rate		35V/μs			40V/μs	
Power Consumption at 1/8 maximum output power @ 4 Ω		1300W			1850W	
Input Sensitivity at rated output power @ 4 Ω, 1 kHz					0dBu (775mV)	
THD at rated output power, MBW=80kHz, 1 kHz					< 0.05 %	
IMD-SMPTE 60 Hz, 7 kHz					< 0.01 %	
DIM30 3.15kHz, 15 kHz					< 0.01 %	
Crosstalk ref. 1kHz, at rated output power					<-70 dB	
Frequency Response -1dB, ref. 1 kHz					13Hz ... 40kHz	
Power Bandwith THD=1%, ref. 1kHz, half power @ 4 Ω					10Hz ... 48kHz	
Input Impedance 20Hz ... 20 kHz, balanced					20kΩ	
Damping Factor at 100Hz / 1kHz					>400 / >300	
Signal to Noise Ratio A-weighted					105dB	
Power Requirements					230V, 50Hz ... 60Hz	
Protection					Audio limiters, High temperature, DC, HF, Back-EMF, Peak current limiters, Inrush current limiters, Turn-on delay	
Cooling					Front-to-Rear, 4-stage-fans	
Safety Class					I	
Dimensions (W x H x D), mm					483 x 132.5 x 385.5	
Weight		27kg				29kg
Retrofitting kit					NRS 90176	
Input Transformers						

BLOCK DIAGRAM



Abmessungen/Dimensions (in mm)



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