

# THÖRESS

## Dual Function Amplifier



### "DFAmP"



## PRODUCT DESCRIPTION

Our Dual Function Amplifier (DFAmP) represents an ultimate implementation of a line control amplifier and a headphone driving amplifier, both functions of which are performed by the same minimalist vacuum tube circuit with very low output impedance. Such providing the amplifier with an outstanding ability to simultaneously drive long cable runs and headphones with an impedance as low as 50 ohms or even lower. The DFAmP also features unique tone control facilities (timbre registers) and a custom designed remote volume control presented with typical THÖRESS style and attention to detail.

The sonic presentation of the DFAmP is of utmost refinement in line and headphone driving mode and thus will easily measure up to the highest expectations of every discerning music lover. And as such is perfect complement to our Parametric Phono Equalizer and our all-tube or EHT Mono Amplifiers.

### BUILT

The amplifier is built with meticulous hand construction using our proven point-to-point wiring techniques. Much care has been taken in arranging each aspect of the internal construction to ensure low noise performance, ease of service and the highest reliability, and for many years to come.

### TOPOLOGY

The amplifier is entirely based on SINGLE-ENDED ZERO-FEEDBACK schematics. Decidedly ignoring the fact that many music lovers still persistently believe in the myth that balanced technology (and the associated cable configuration with XLR connectors) is generally superior to single-ended concepts. Readers who want to learn more about our view on balanced techniques and our general design approach are encouraged to read the paper (THÖRESS - Behind the Curtain) downloadable on the ABOUT button of our website.

More specifically, the circuit of the DFamp consists of a 12J5GT triode gain stage followed by a unity-gain current buffer employing a 12GN7 power tube operated in triode mode with high idle current. The 12J5GT an octal-base single-triode from the famous 6J5/6SN7/6A4 family of tubes with fairly low transconductance developed in the early times of tube electronics. Whereas the 12HG7 is a fairly late (all-glass) development with high gain and very high transconductance, making it an ideal choice for buffer applications. Both tubes are unarguably among the most linear amplification devices ever developed in the history of electronic technology and as such are a perfect choice in the context of minimalist zero-feedback circuit design.

### GT SELECTOR

The DFamp allows for subtle tone control via 4 on-the-fly selectable preset timbre registers on two different gain levels implemented by means of a 6-position rotary switch which we call GT Selector (G/AIN and T/ONE, Empfindlichkeit & Klang). Notably, the timbre registers do NOT rely on conventional clumsy and sound destructive tone control circuitry. Each register is realized smartly by interposing solely one additional capacitor (per register and channel) to the circuit! Two positions of the GT selector are assigned with neutral tonality (perfectly flat frequency response). The mapping between selector positions, gain and sound effects is described by the chart below.

Position	1	2	3	4	5	6
Gain	(-)6db	(-)6dB	(-)6dB	Full gain	Full gain	Full gain
Bass	Bass(+++)	0	Neutral	Bass(++)	Bass(+)	Neutral
Treble	Treble(++)	Treble(+)	Neutral	0	0	Neutral

The timbre registers are useful for restoring tonal imperfections of the listening program, often given by a lack of extension on one or both ends of the audio band. And for equalizing the response of individual headphones. The tone function assigned with pos1 of the GT selector can also be used for counteracting the loudness effect (weaker perception of bass and treble frequencies at low listening loudness). In practice, a combination of all three equalizing purposes will likely be simultaneously applicable.

### VOLUME CONTROL

A high grade motor-driven dual-potentiometer is employed for (manual and remote) volume control. These parts are made to our taper specifications by ALPS in Japan so as to allow for conveniently fine volume adjustment. Each individual potentiometer

is selected from a large production batch for exceptionally good channel balance with respect to rotational angle by careful measurement.

## OUTPUTS

The circuit of the DFamp simultaneously terminates in a frontal toggle switch which feeds two adjacent 2x6.35mm jack socket headphone outputs KH1 and KH2, and a triple output on the rear panel (master output, 3x2 RCA jacks). The master output jacks are connected to the circuit permanently whereas KH1 and KH2 can be disengaged by setting the toggle switch to the middle position. Thanks to the triple output it is possible to simultaneously drive up to three power amplifiers or two power amplifiers and an active sub-woofer module without further adaptation.

## INPUTS

The DFamp comprises 6 line level inputs (2x6 RCA jacks) divided in 3 groups with different gain and input impedance characteristics as described below.

### High Gain on Inputs #1, #2, #3

The gain on inputs #1, #2 and #3 is 26dB (20-times) when the GT selector rests in pos4/5/6 and 20dB (10-times) for all other selector positions, pos1/2/3. These inputs have a comparatively high input impedance of 80.000 ohms and are suitable for classic analogue program sources such as phono preamplifiers, tuners or reel-to-reel tape machines.

### Medium Gain on Inputs #4, #5

Inputs #4 and #5 are appropriate for high output program sources such as CD/DVD players, stand-alone DACs or streamers, offering 18dB gain (8-times) when the GT selector rests in pos4/5/6 and 12dB (4-times) for the other selector positions, pos1/2/3. The input impedance on these two inputs is 30.000 ohms.

### Low Gain on Input #6

Input #6 (input impedance 30.000 ohms) is assigned with exceptionally low gain of 10dB (3-times) and 4dB (1.5-times) with GT selector in pos4/5/6 and pos1/2/3 respectively. It is reserved for sources with exceptionally high output characteristic as they are found on some CD players and DACs with vacuum tube output circuitry. It can also be used for the purpose of enhancing the impact of the timbre registers, as described in the user manual. Summarizing, the gain pattern on the inputs is

(20, 20, 20; 12, 12; 4)dB and (26, 26, 26; 18, 18; 10)dB

with GT selector in pos1/2/3 and pos4/5/6 respectively.

## MAINS TRANSFORMER

The DFamp is equipped with a proprietary mains transformer produced in-house to ensure the highest possible quality. This part has been specifically designed for low body noise emission and low leakage. Nevertheless, it is mounted to the chassis via isolation elements in order to eliminate even the slightest interference of residual transformer vibrations with the circuit. Since the mains transformer is produced in-house we can easily built transformers for all kinds of mains voltages on demand, for example for 100Vac (Japan), 120Vac (USA, Canada), 220Vac (South-Korea, China, Thailand, Indonesia) or 245Vac (Australia).

## FEATURE OVERVIEW

- Ultimate vacuum tube line control and headphone driving amplifier.
- Both functions performed by the same minimalist single-ended zero-feedback circuit utilizing 2x12J5GT+2x12GN7 tubes.
- 6x line inputs (6x2 RCA jacks), with gain pattern (3x26dB; 2x18dB; 1x10dB).
- Triple master output with very low output resistance (3x2 RCA jacks).
- 2x toggle-selectable headphone outputs (2x6.35mm jack sockets).
- Remote volume control via motor-driven dual-potentiometer with excellent channel balance and low angle sensitivity for conveniently fine volume adjustment.
- Four on-the-fly selectable tone control presets entangled with a 6dB gain attenuator circuit implemented via 6-position rotary dial (GT selector).
- Full hand construction, point-to-point wiring throughout.
- Ultra low noise and low leakage mains transformer manufactured in-house for 230Vac, 100Vac (Japan), 120Vac (USA, Canada), 220Vac (South Korea, China, Thailand, Indonesia), 240Vac (UK) or 245 Vac (Australia).
- Nonmagnetic aluminum casework, front and rear panel with anodized printing, powder coated lids, dimensions: 434x434xH154mm, 154=134+20/footers.
- Dimensions of the crate: 650x650x350 mm. Shipping weight 11.7Kg.

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**THÖRESS...**

**A Tribute to Professional Audio Components  
from the Golden Age of the Vacuum Tube !**

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