

Vision/Pulse Distribution Amplifier (VDA)

B4006



Features

**72 outputs per frame
(six outputs per DA)**

Separate power supply

**Dual power supply units with ten
DAs option**

**Fixed or variable gain by link
change**

**One standard DA with add-on
modules for video equalizing or
delay**

Introduction

The Vision and Pulse Distribution Amplifier is a new design suitable for the distribution of video, pulses or subcarrier throughout a studio complex.

In standard form the unit will handle 1-0V video or 2-0V pulses. However, a version suitable for 4-0V pulses can be supplied on request.

The standard unit may be modified to incorporate video equalization for cable correction or delay for timing by the addition of plug-in modules.

Description

The standard frame assembly houses a PSU which supplies +18V -18V to the DAs of which up to 12 may be housed in the same rack.

For ultimate assurance two PSUs may be fitted with up to ten amplifiers in which case the failure of one power supply will not affect the output of the DAs.

The frame assembly fits into a standard 19in rack and the standard vision and pulse amplifier has bridging inputs. When fitted with the video equalizing module the input is isolated from earth providing common mode rejection but still with bridging input. When fitted with a delay module the input is internally terminated. Any combination of standard equalizing or delay DAs can be accommodated in one frame. The DA has provision for three different gain settings by internal links.

The amplifier is designed to be highly stable and the difference in delay between any two standard amplifiers having the same fixed gain will be within 0.3ns at sub-carrier frequency.

The conversion from a standard DA to either a video/pulse equalizing DA or a delay DA is by the addition of a simple plug-in board. This allows maximum flexibility in use as requirements change. Any type can be readily changed at any time by either adding or removing the appropriate module.

Ordering Information

To ensure that equipment is supplied exactly to requirement please make sure that the ordering information is clear. When ordering please state:

- 1) If a 4-0V pulse version is required.
- 2) A.C input voltage.
- 3) Whether additional copies of the handbook are required.
- 4) Whether spares are required.
- 5) Details of numbers of equalizing modules, delay modules, PSUs, standard amplifiers and frames required.

Data Summary

Standard Amplifier

A.C input: 100V-125V, 200V-250V, 49Hz-61Hz, 110VA typically for a full frame.

Input impedance: 75Ω bridging. Return loss better than 46dB to T pulse with the amplifier switched on.

38dB with the amplifier switched off.

38dB with the amplifier removed.

Allowable d.c on input: ±5V.

Gain: Choice of three settings by internal links

- a) 0dB ±0.25dB by front panel control.
- b) +3dB ±0.25dB by front panel control.
- c) 0dB to +6dB by front panel control.

Gain stability: ±0.05dB.

Delay: The difference in delay between any two amplifiers having the same fixed gain is within 0.3ns at subcarrier frequency.

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Broadcasting Division

Outputs: Six outputs, maximum levels:
Edition 01: 1-4V peak-to-peak video or 2-5V peak-to-peak subcarrier or 2V pulses.
Edition 02 (Pulse DA): 4V pulses.

Gain stability with temperature:
0-001dB per °C.

Output impedance: 75Ω. Return loss with T pulse better than 36dB (4-0V version 26dB).

Output isolation between similar outputs on one DA: Greater than 45dB at 4-4MHz. Greater than 70dB at 100kHz.

Frequency response:
Fixed gain: 0dB and +3dB ±0-02dB to 5MHz. ±0-2dB to 8MHz.

Variable gain: 0dB to +6dB ±0-1dB to 5MHz. ±1dB to 8MHz.

L.F tilt: Less than 0-1% per millisecond on 50Hz square wave.

V.L.F response: No overshoot.

Differential phase (at 4-43MHz): With 1-0V peak-to-peak output, less than 0-1° distortion. With 1-4V peak-to-peak output, less than 0-2° distortion.

Differential gain (at 4-43MHz): With 1-0V peak-to-peak output, less than 0-1%. With 1-4V peak-to-peak output, less than 0-2%.

Periodic noise: Hum and lower order harmonics up to 4kHz, less than 0-5mV peak-to-peak.

Luminance/chrominance delay inequality: Less than ±1ns.

Luminance/chrominance gain inequality: Less than ±0-25% (averaged over five amplifiers connected in series).

Ambient temperature: The performance of the amplifier will be maintained for any ambient temperature variations of ±10°C in the range from -10°C to +45°C.

Identities

B101-4006-01 Frame Assembly

B102-4006-01 Power Supply Unit

B111-4006-01 Video/2V Pulse Dist.

Amplifier

B111-4006-02 4V Pulse Dist. Amplifier

Add-on Boards to Amplifier:

B113-4006-01 Cable Equalizing Board

or

B114-4006-02 Video Delay 0-235ns in 5ns steps.

B114-4006-03 Video Delay 0-435ns in 5ns steps.

B114-4006-04 Video Delay 0-835ns in 5ns steps.

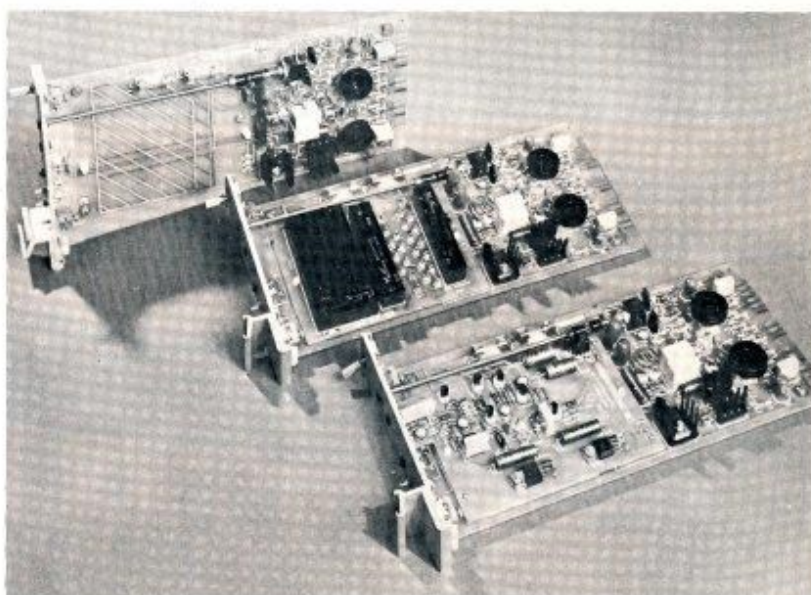
B114-4006-05 Video Delay 600-1035ns in 5ns steps.

or

B114-4006-11 Pulse Delay 0-235ns in 5ns steps.

B114-4006-12 Pulse Delay 0-620ns in 20ns steps.

B114-4006-13 Pulse Delay 0-2120ns in 20ns steps.



Standard DA, delay DA, and equalizing DA

Standard DA with equalizing module As standard unit except:

Maximum cable compensation: 300m of T3304 or T3205.

Frequency response, equalization at zero: ±0-05dB to 5MHz, ±0-5dB to 8MHz.

When equalizing max cable length: ±0-1dB to 5MHz; ±1dB to 8MHz.

Maximum common mode signal: 8V pp.

Common mode rejection: not less than 50dB at 50Hz.

Differential gain: 0-25% at 1V output. 0-5% at 1-4V output.

Differential phase: 0-25° at 1V output. 0-5° at 1-4V output.

Luminance/chrominance delay inequality: not greater than 2ns.

Luminance/chrominance gain inequality: not greater than 1%.

V.L.F response: a single overshoot not greater than 4%.

Standard amplifier with delay module fitted As standard unit except:

Input: 75Ω internally terminated.

Delay: 0-835ns in 5ns steps.

Frequency response: ±0-15dB at 4-2MHz, ±0-2dB at 8MHz. -1dB at 10MHz.

Dimensions:

Height: 132mm (5-25in) and fits standard 19in rack

Depth: o/all 31-5mm (12-4in)

Weight: Frame plus one PSU and 12DAs 9-4kg (20lb 10oz)

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