Dual Channel High Voltage Linear Amplifiers

DATA SHEET

- Dual-Channel High Voltage Linear Amplifiers from 100Vp-p up to 1600Vp-p
- Two amplifiers in one box
- Ultra-linear amplification
- High Bandwidth, up to 1 MHz
- High Slew rate, up to 500V/µs
- Low output impedance, down to 0.1 Ohm
- Wide range of models to suit any performance and/or budget demand

Overview

Pendulum Instruments High Voltage Linear Amplifiers are general purpose broadband linear amplifiers having a fixed or variable amplification and capable of bipolar or unipolar output. The amplifiers outputs are linear from DC up to Megahertz range, and exist in Single-Channel and Dual-Channel versions.

Pendulum Instruments High Voltage Linear Amplifiers are valuable tools, for research institutes, R&D labs and component manufacturing industries, in a wide range of applications. Common examples are driving piezo actuators, MEMS, OLEDs, liquid crystals, etc.

The amplifiers are d esigned to drive resistive and/or small capacitive loads. The output is equipped with a current limiting circuit that withstands accidental short-circuits.

Dual-channel Amplifier selection

We offer a w ide range of Dual-Channel Hi-Voltage Linear Amplifiers to suit any performance demand for Output voltage, Output current, Speed/Bandwidth and/or budget.

The Dual-Channel Amplifiers comes in two basic design versions: the D-models with two independent amplifiers in one box, and the DI-models, which include an additional input signal inverter for the second amplifier. The DI-models can either be used as a dual output amplifier, like the D-models, OR as a single-output amplifier with doubled nominal amplitude

In models A400DI or A800DI, the first amplifier outputs the amplified in-phase input signal, and the second amplifier outputs the inverted signal (180 degrees phase shift). By combining the outputs of the two individual amplifiers you will effectively double the output p-p Voltage, compared to the output of individual amplifiers.

Select your Amplifier from one of our two series:

F-series (F10A, F20A) – Low Cost series

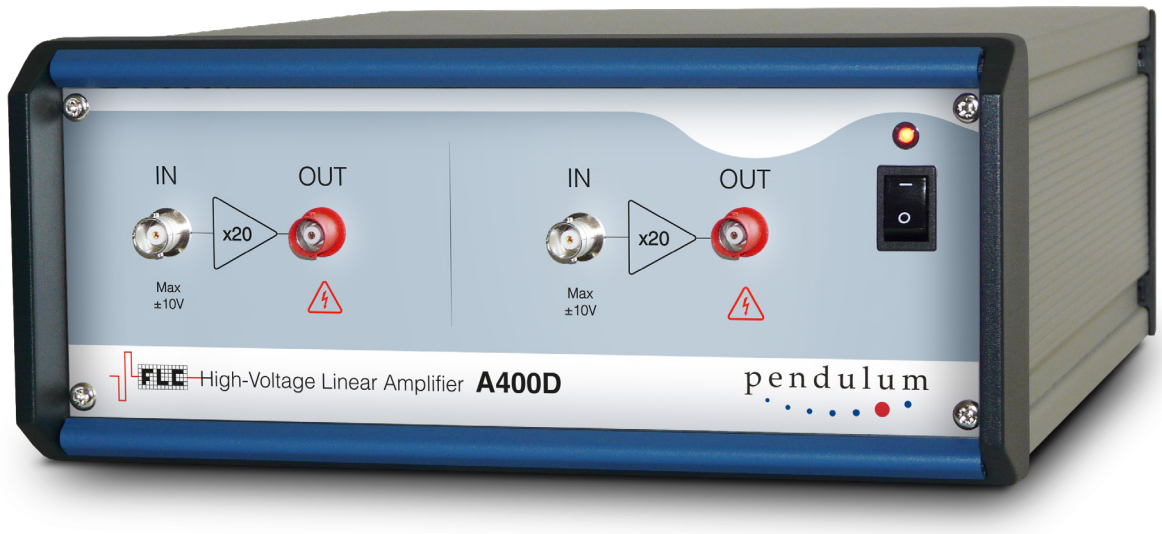
A-series (A400, A600, A800) – High Voltage series

Explore details of the individual models on the follow pages.

For Single-Channel Amplifiers, we refer to our Single Channel High Voltage Linear Amplifiers Datasheet.

Model	Output Voltage per channel	Output Current per channel	Bandwidth	Gain
F10AD	-100 to +100V	185 mA	1 MHz	x10, fixed
F20AD	-150 to +150V	150 mA	500 kHz	x20, fixed
A400D	-200 to +200V	150 mA	500 kHz	x20, fixed
A400DI	-200 to +200V or 800Vpp	150 mA	500 kHz	x20, fixed
A600D	-300 to +300V	75 mA	350 kHz	x100, fixed
A800D	-400 to +400V	60 mA	300 kHz	x100, fixed
A800DI	-400 to +400V or 1600Vpp	60 mA	300 kHz	x100, fixed

Dual Channel High Voltage Linear Amplifier A400D

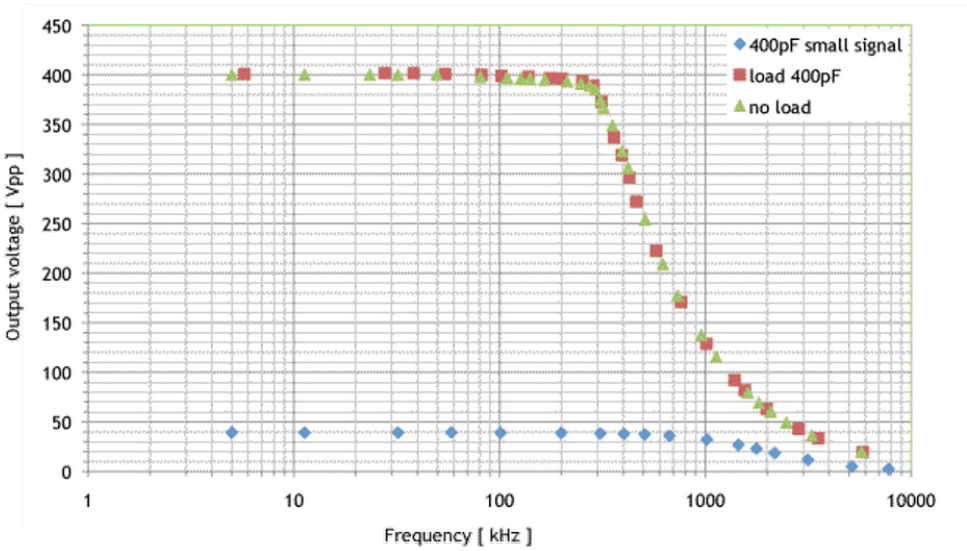


The Pendulum Instruments Dual Channel High Voltage Linear Amplifier A400D contains two independent A400 amplifiers that share common ground reference and power supply. This unit has a fixed amplification of 20 times and capable of bipolar high voltage output of ±200. Any other signal source with amplitude up to ±10 V can be used as an input device. The input amplitude should normally be kept within ±7.5 V. The A400 High Voltage Linear Amplifier is equipped with a microfuse rated at 15 mA, which will be blown if the input voltage exceeds 300% of the maximum.

The maximum capacitive load is set at the factory to 400 V/µs which yields the load limit of ca 400 pF. The continuous output current limit is 150 mA and the output power limit is ca 30 W.

Frequency response

Full and small-signal frequency responses without load (red and orange marks) and with 400 pF capacitive load (blue and green marks), respectively, are shown in the diagram below:



Dual Channel High Voltage Linear Amplifiers

		A400D/DI	A600D	A800D/DI	F10AD	F20AD
Bandwidth	at 100 Vpp	DC to 1 MHz	DC to 1 MHz	DC to 1 MHz	DC to 1 MHz	DC to 1 MHz
	at max. Vpp	DC to 500 kHz	DC to 350 kHz	DC to 300 kHz	DC to 1 MHz	DC to 500 kHz
Amplification	type	fixed				
	level	x 20	x 100	x 100	x 10	x 20
Load	type	resistive || capacitive				
	full bandwidth	400 pF	300 pF	200 pF	400 pF	400 pF
Impedance	input	1 Mohm || 30 pF				
	output	<0.1 ohm in the linear mode				
Voltage	input	nominal ±10 V	nominal ±3 V	nominal ±4 V	nominal ±10 V	nominal ±7.5 V
	output	max ±200V	max ±300 V	max ±400 V	max ±100 V	max ±150 V
Current	each channel	150 mA continuous	75 mA continuous	60 mA continuous	185 mA continuous	150 mA continuous
Slew Rate	output	400 V/µs	500 V/µs	500 V/µs	400 V/µs	400 V/µs

Operating Ambient Temperature	0°C to 30°C
Storage Temperature	0°C to 60°C
Relative Humidity	up to 90% (operation), 30% to 50% (storage)
Power Requirements	100V or 110 V or 220 V, 50/60 Hz or 110/220V selector switch
Fuse	100/110 V: 3.15 A (slow), 220/230 V: 2 A (slow)
Dimensions (H/W/L)	102 x 257 x 262 mm (4.0" x 10.1" x 10.3")
Weight	4 kg (8.8 lbs)
Country of Origin	Poland

October 2020, rev.5 Dual Channel High Voltage Linear Amplifiers
Specifications subject to change or improvements without notice.
4031 601 40101

Contact Us:

Request A Quotation:
sales@pendulum-instruments.com
Orderdesk:
orderdesk@pendulum-instruments.com

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