Single Channel High Voltage Linear Amplifiers

DATA SHEET

- Single-Channel High Voltage Linear Amplifiers from 70Vp-p up to 1600Vp-p
- Ultra-linear amplification
- High output power, up to 2A output current
- High Bandwidth, up to 5 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 designed to drive resistive and/or small capacitive loads. The output is equipped with a current limiting circuit that withstands accidental short-circuits.

Single-channel Amplifier selection

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

Select your Amplifier from one of our 4 series:

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

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

P-series (P100, P150, P200) – High Power series

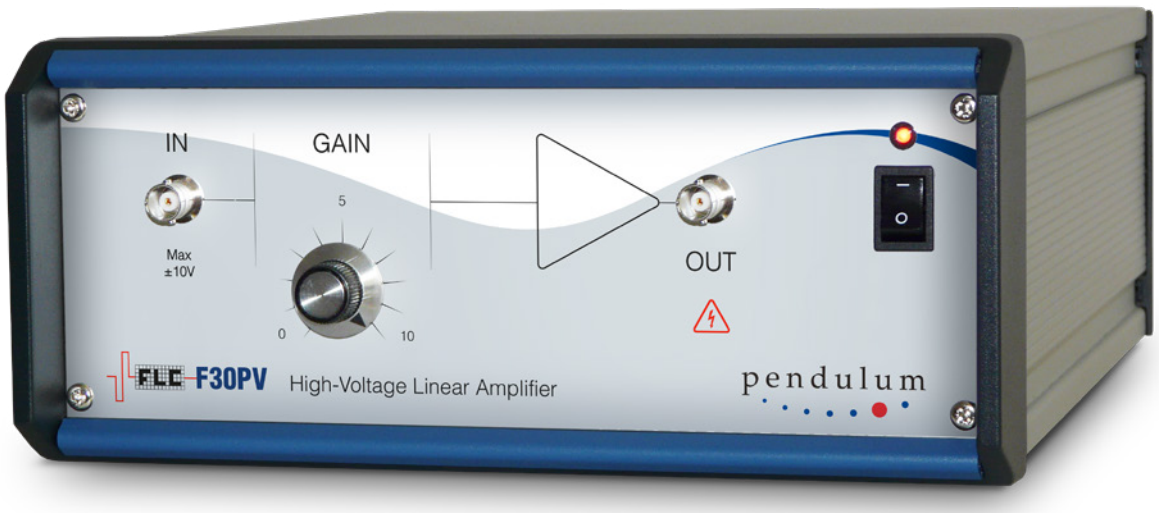
PV-series (F30PV, F70PV) – High Speed series

Explore details of the individual models on the follow pages.

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

Model	Output Voltage	Output Current	Bandwidth	Gain
F10A	-100 to +100V	185 mA	1 MHz	x10, fixed
F20A	-150 to +150V	150 mA	500 kHz	x20, fixed
A400	-200 to +200V	150 mA	500 kHz	x20, fixed
A600	-300 to +300V	75 mA	350 kHz	x100, fixed
A800	-400 to +400V	60 mA	300 kHz	x100, fixed
P100	-50 to +50V	2A	100 kHz	x10, fixed
P150	-0 to +150V	1A	100 kHz	x20, fixed
P200	-100 to +100V	1A	80 kHz	x20, fixed
F30PV	-35 to +35V	2A	5 MHz	x10, variable
F70PV	0 to +70V	1A	5 MHz	x10, variable

Variable Gain High Speed Linear Amplifier F30PV



The Pendulum Instruments Variable Gain High Speed Linear Amplifier F30PV is a very fast general purpose linear amplifier having a variable amplification of 0-10 times and capable of bipolar voltage output of ±35V. The amplifier has an attenuator at the input. At the knob position “10” the amplification is equal to 10x. Standard value is 500 ohm, but other values like 50 ohm, 1kohm, etc., can be fitted in on request. Any signal source with amplitude within ±3.5 V can be used as an input device. A typical output voltage range of a function generator will not harm the amplifier but the input protection network will limit the signal amplitude to ±3.5 V (after attenuator) and may cause clipping. The Variable Gain High Speed Linear Amplifier F30PV is equipped with a microfuse rated at 40 mA, which will be blown if the input voltage exceeds 300% of the maximum.

The maximum capacitive load is set at the factory to 500 V/µs which yields the load limit of 1 nF. The output current limit is set to ca 1.5 A. The output is equipped with a current limiting circuit that withstands accidental short-circuits and with a protective 1 Ω resistance. However, prolonged short-circuiting or overload should be avoided.

Total noise at the output with short-circuited input is:

Frequency [kHz]	0.5	1	10	50
Noise [µV/√Hz]	<1.3	<0.32	<0.06	<0.05

Frequency response

The frequency response to 1 Vpp input amplitude and with 50 ohm load is shown in the following diagram: