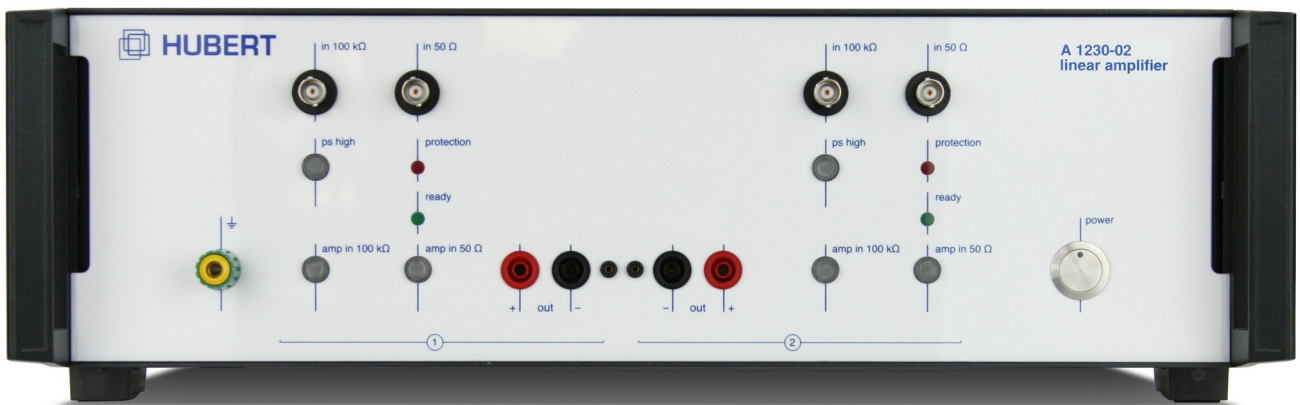




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## Datasheet



# A1230-02

**DC – 7 MHz | 380 V/ $\mu$ s | 185 W (source) | 68 W (sink)**



# 1 Product Description

The A1230-02 is a linear, extremely broadband precision power amplifier. It is predestined for all applications that require rapidly changing signals at any resistive and complex loads.

The A1230-02 has two addable inputs with 50  $\Omega$  and 100 k $\Omega$  input resistance; the 50  $\Omega$  input makes it the ideal downstream equipment for conventional function generators.

Two selectable operating voltages are available for high voltage / low current or low voltage / high current applications. Especially for very low impedance loads the choice of the low operating voltage leads to a considerable reduction of power dissipation and a higher output current.

If higher output voltages are required, the preamplifier output (bridge out) allows easy construction of a bridge circuit with the second channel of the A1230-02 to double the output voltage. The rise time is also doubled of course.

If more current is required, the two channels can be easily connected in parallel via a plug-in parallel switch box. In this case both channels must be operated with the identical output signal.

The device is equipped with a quiet, temperature-controlled fan. In addition to overtemperature shutdown, a temperature-dependent power loss calculation and fast current monitoring ensure perfect short-circuit and overload protection. The unit is operated via the controls on the front panel of the amplifier. In addition, the amplifier can be completely remote controlled via the USB interface using a simple byte protocol.

If higher output voltages or higher output currents are required, configurations with series or parallel connections of several A1230-02 are possible.

Please find the latest release of this datasheet on our website:  
[www.drhubert.com](http://www.drhubert.com)



## 2 Features

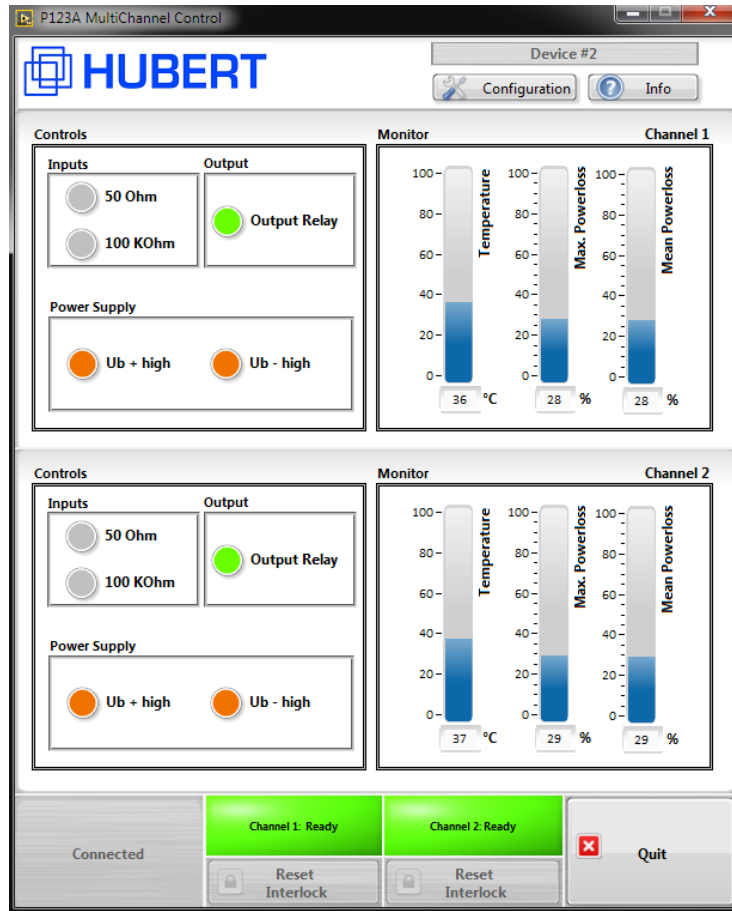
- Universally applicable broadband lab amplifier; ideally suited as downstream equipment for function generators
- Amplifier is stable with all inductive and capacitive loads
- Output voltages up to  $75 V_{DC/peak}$
- Output current up to  $5 A_{DC} / 10 A_{peak} (> 10 \text{ Hz}) / 15 A_{peak} (< 5 \text{ ms})$
- Two added inputs with  $50 \Omega$  and  $100 \text{ k}\Omega$  input resistance, respectively
- Preamplifier output (bridge out) allows for simple bridge circuit structures for doubling the output voltage
- 2 supply voltages for ideal load adjustment
- USB port (emulated COM port) as standard, Ethernet (RJ45) optional

## 3 Applications

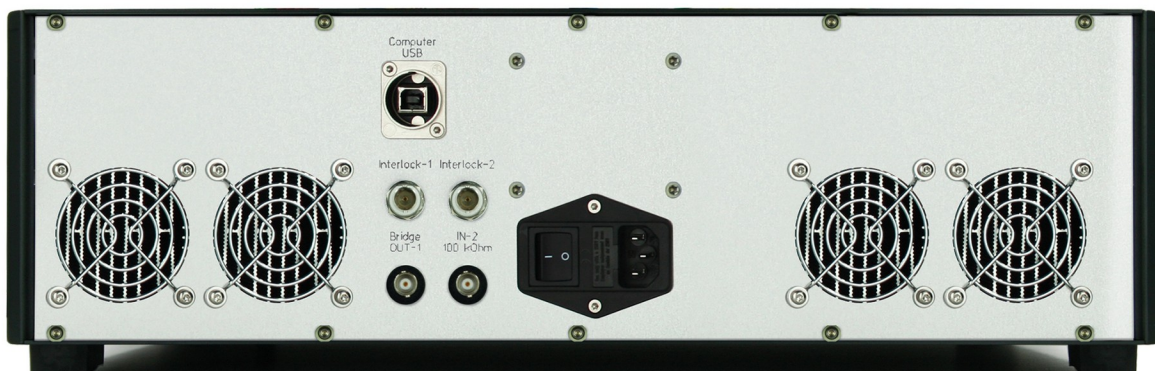
- General lab applications for research, development and testing
- EMC testing
- Material testing
- MRI
- Component tests
- Plunger coil drives
- Piezo actuation
- Generation of magnetic fields (e.g. with Helmholtz coils)
- Medical engineering
- Laser technology
- Plasma technology



## 4 Control Software



## 5 Pictures





## 6 Specifications

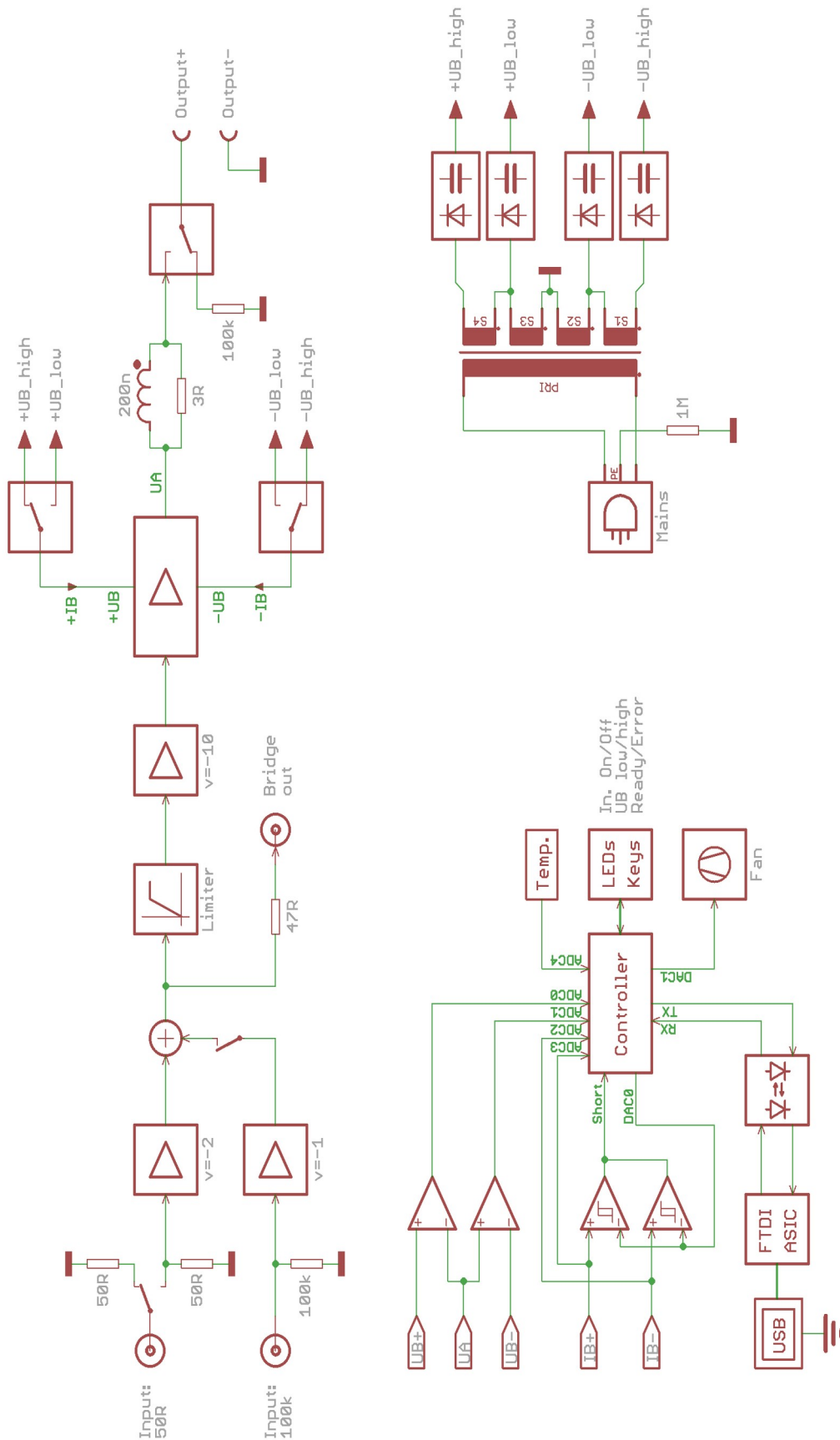
Parameter	Specification	Conditions/Moments
		Mains: 230 V
		25° C ambient temperature
		Continuous operation
Input Impedance	50 Ω ± 1% Gain: 20 ± 1% (±100ppm/°C)	
	100 kΩ ± 1% Gain: 10 ± 1% (±100ppm/°C)	
Maximum Input Level	± 7,5 V	
Maximum allowed Input Voltage	± 3,75 V ± 15 V ± 10 V	50 Ω Input 100 kΩ Input 50 Ω Input
Small Signal Frequency Response		
	DC - 7 MHz	-3 dB, 100 mV <sub>rms</sub> @ 50 Ω Load
	DC - 5 MHz	-1 dB, 100 mV <sub>rms</sub> @ 50 Ω Load
Phase response	0, -5 degrees	DC – 120 kHz @ 50 Ω Load
Output Voltage (continuous) 50 Ω Load, < 1% THD+N	± 75 V <sub>peak</sub> ± 62 V <sub>peak</sub> ± 37.5 V <sub>peak</sub>	< 800 kHz; High Voltage Mode < 1 MHz; High Voltage Mode < 1 MHz; Low Voltage Mode
Output Current (continuous)	± 2.5 A <sub>peak</sub> ± 5 A <sub>peak</sub>	High Voltage Mode Low Voltage Mode
Output Current (pulse < 5 ms)	± 7.5 A <sub>peak</sub> ± 15 A <sub>peak</sub>	High Voltage Mode Low Voltage Mode
Slew Rate	380 V/uSec	50 Ω Load
Rise Time	< 330 ns	± 75 V Rectangular @ 50 Ω Load
Noise		
20 Hz - 10 MHz	< 1.5 mV <sub>rms</sub>	
DC - 20 MHz	~ 10 mV <sub>pp</sub>	
THD+N		
100 kHz	< 0.1 %	53 V <sub>rms</sub> / 50 Ω Load
1 MHz	< 0.3 %	40 V <sub>rms</sub> / 50 Ω Load
Output Offset	± 2 mV typ.; ± 5 mV max. (± 0.1 mV/°C)	
Output Impedance	~ 50 mΩ + 0.30 μH	
Output Impedance Bridge Out	47 Ω	Load > 2 kΩ



Parameter	Specification	Conditions/Moments
<b>Source Power, DC</b>		
30 $\Omega$	185 W	High Voltage Mode
7.5 $\Omega$	185 W	Low Voltage Mode
<b>Sink Power, DC</b>	68 W	High/Low Voltage Mode
<b>Physical Characteristics</b>		
AC Power	230 VAC / 50 Hz	
Remote control	USB	
Operating Temperature	10 °C to 55 °C	
Humidity	80% or less at 40 °C	non-condensing
Cooling	Forced air	
Dimensions (W x H x D)	449 x 133 x 435.5 mm	
Weight	Approx. 14 kg	



# 7 Block Diagram





## 8 Product Options

The following product options are available at the time of placing the order. Upgrades of existing devices are not possible.

Article Name	Article Description	Article Number
Ethernet Option	Option-06: Ethernet interface (RJ-45)	11101060

## 9 Contact

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## 10 Document History

Revision	Date	Changes
2.0	March 2020	Initial publication in new layout