

VX4616 Dual Precision Power Amplifier



TECHNICAL DATA SHEET

Features

PXI

VXI

LAN

cPCI

PXIe

GPIB

USB

RS232
485

external
PCIe

- Frequency bandwidth of 70 kHz (150 kHz optional)
- Two galvanically isolated bipolar output channels
- Outputs are operating as inverting precision power amplifier
- Outputs are operating as programmable DC source (voltage or current)
- Outputs are programmable or adjustable via an external analog source
- Autosensing
- Pulse modulation with extremely high slew rate

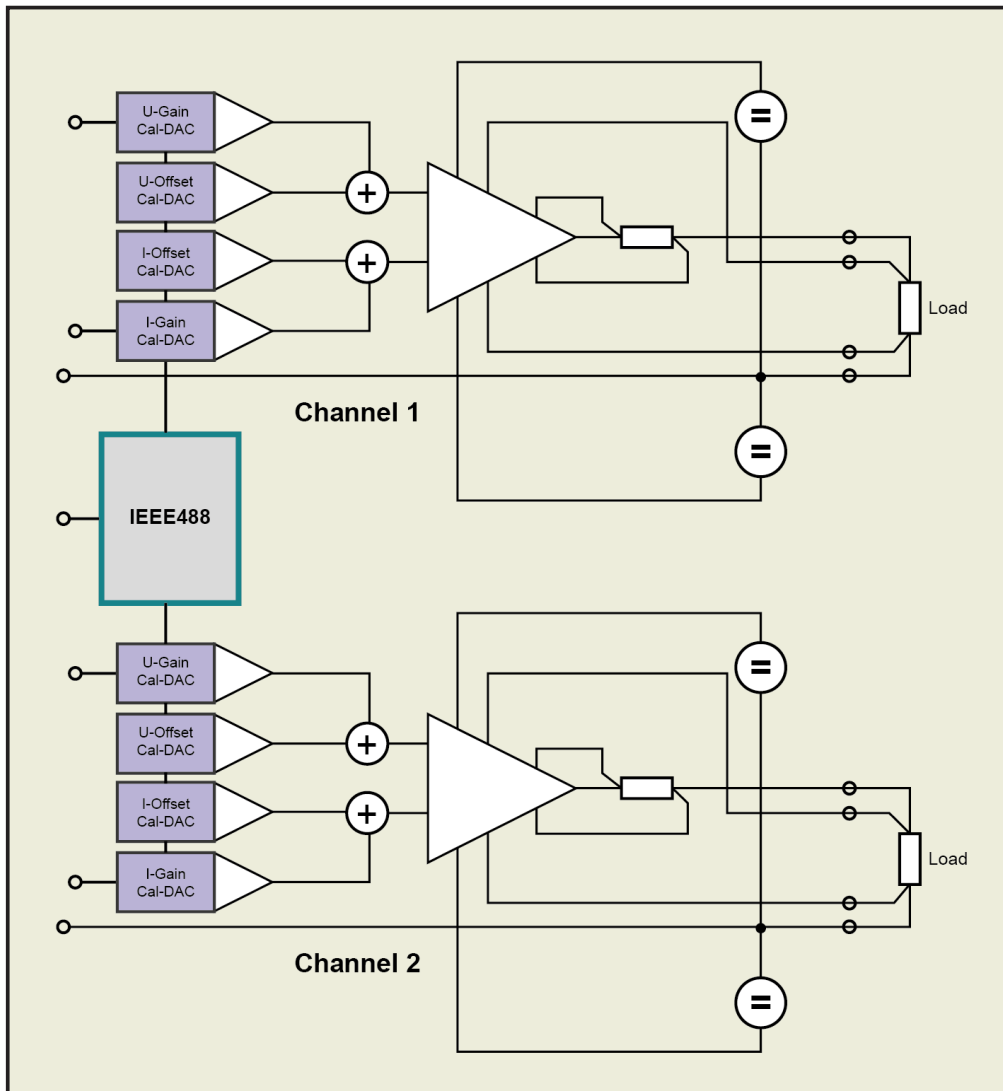
Product Information

The VX4616 is a two output high precision four-quadrant power amplifier and can be used either as an inverting amplifier or as a programmable DC source. Both power stages are separated galvanically.

Typically the VX4616 is used as a voltage source with current limiting.

Together with option A and D the VX4616 can be used as a voltage controlled current source for AC signals of up to 70 kHz (150 kHz option B).

This function can be used to generate a constant magnetic field in coils even with changing frequencies and inductance.



Mode: Voltage-Control/Current-Limit

DC Output Voltage	Specification	Comment
Programming range	-50V...+50V	Programmable current limit $\pm 0.1\text{A} \dots \pm 1.6\text{A}$
Resolution	16 Bit, 1.6 mV	
Bandwidth	70 kHz (3 dB)	Extended bandwidth available (Option B)
Distortion	4mV_{RMS}	At 1 kHz and $R_{\text{Load}} = 35\ \Omega$
Nominal gain	+5	Gain factor $U_{\text{out}}/U_{\text{in}}$
Gain error	0.015%	
Gain drift	20 ppm/°C	
Offset voltage	$\pm 5\text{mV}$	Offset voltage at $U_{\text{out}} = 0\text{V}$
Offset drift	$200\ \mu\text{V}/^\circ\text{C}$	
Input impedance	10 k Ω	Input impedance of analog control input
Maximum sensing voltage	$\pm 3\text{V}$	
Pulse modulation ^{1,2}		Option C
Rise time	<50 ns	$U_{\text{out}} = 10\text{V}; R_{\text{Load}} = 200\ \Omega$
Fall time	<100 ns	$U_{\text{out}} = 10\text{V}; R_{\text{Load}} = 200\ \Omega$
Minimum pulse width	1 μs	

DC Output Current	Specification	Comment
Programming range	-1.6 A... +1.6 A	Positive and negative limit set to same value
Nominal gain	0.16 A/V	Gain factor $I_{\text{out}}/U_{\text{in}}$
Gain error	0.5%	
Gain drift	100 ppm/°C	
Offset current	15 mA	
Input impedance	10 k Ω	Input impedance of analog control input

¹ Positive output voltage only.

² Channel 1 only.

Notes: All product data are specified for an ambient temperature of $23^\circ\text{C} \pm 5^\circ\text{C}$ (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

Mode: Current-Control/Voltage-Limit

DC Output Current	Specification	Comment
Programming range	-1.6 A... +1.6 A	Positive and negative limit set to same value
Resolution	16 Bit, 50 μ A	
Bandwidth	5 kHz (3 dB)	
Nominal gain	0.16 A/V	Gain factor I_{out}/U_{in}
Gain error	0.2%	
Gain drift	100 ppm/ $^{\circ}$ C	
Offset current	15 mA	
Input impedance	10 k Ω	Input impedance of analog control input

DC Output Voltage	Specification	Comment
Programming range	-50 V... +50 V	Positive and Negative limit set to same value
Nominal gain	5	Gain factor U_{out}/U_{in}
Gain error	0.5%	
Gain drift	100 ppm/ $^{\circ}$ C	
Offset current	15 mA	

Ordering Information	Comment
Option A	Current source, requires option D
Option B	Extended bandwidth (150 kHz)
Option C	Pulse modulation (ch. 1 only)
Option D-1/2/3	Remote control (RS232, USB, and IEEE-488)