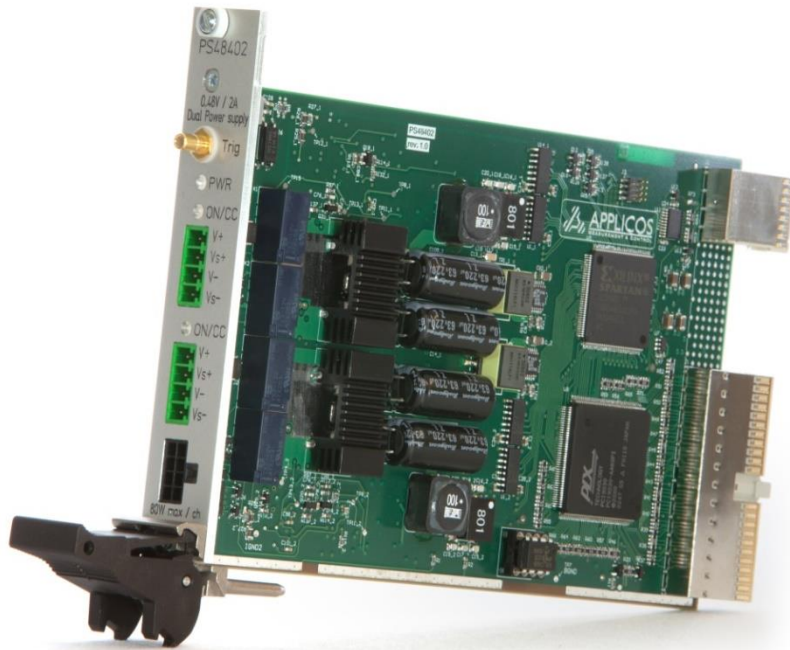


# PS48402 – Dual channel Programmable PXI Power Supply



## Features

- 2 channels of 80W max. each
- 0-48VDC / 2A per channel
- Isolated outputs
- High accuracy, low noise output voltage
- 4-Wire / Remote Sensing connection
- Programmable Current Limit
- 16 Bit Read Back of Output Voltage / Current
- Integrated transient recorder
- Flexible trigger options
- .NET, LabVIEW and LabWindows/CVI (VXIplug&play compatible) drivers included

## Application areas

- Automotive
- Telecom
- Board level testing
- Component level testing
- DUT power supply

## Product description

The PS48402 is a dual-channel Programmable DC Power supply in a single-slot 3u PXI / cPCI form factor. Each output is fully isolated and capable of providing 0 - 48V DC / 2A / 80W per channel. Both current and voltage are programmable and readable with 16-bit resolution. This makes the PS48402 a very cost- and rackspace-effective solution to power your dual-rail unit under test.

### Integrated transient recorder

The PS48402 has a programmable current limit and the ability to measure the output voltage and current under software or trigger control. An integrated transient recorder allows capturing up to 16384 samples of output current or voltage with a maximum sample rate of 10kSps.

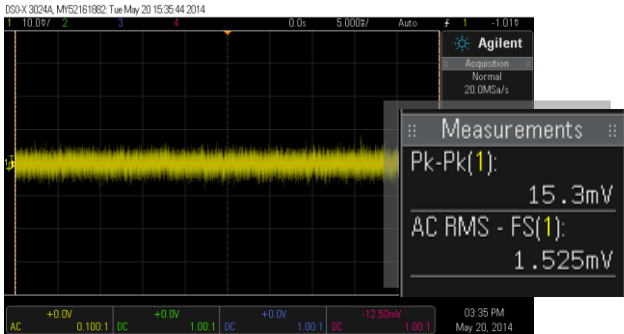
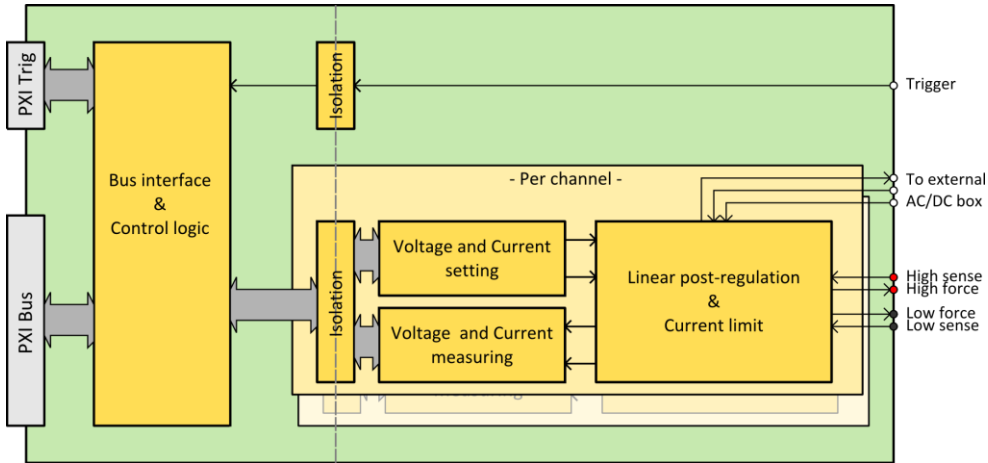
### Triggered actions

Both the output voltage and current can be updated under trigger control and the transient recorder can be started on the same trigger. This allows for recording step responses without additional instruments.

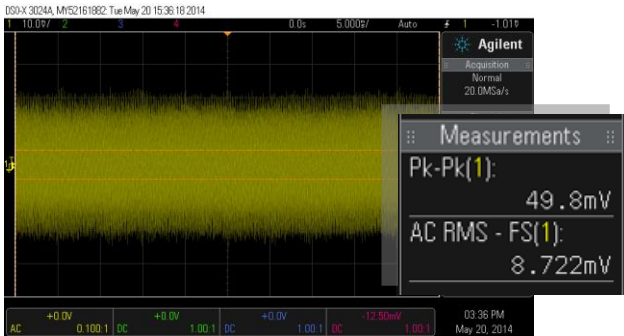
### Input power

Each unit comes with an external AC/DC power box that provides power for the outputs from the mains voltage. This minimizes loading of the backplane/chassis power source, improving overall system stability.

# PS48402 – Dual channel Programmable PXI Power Supply



PS48402 output noise (20Hz-1MHz BW, 24V, 82Ω load)



Competitor output noise (20Hz-1MHz BW, 24V, 82Ω load)

## Low noise due to linear post-regulation

The PS48402 is optimized for low noise. Its main noise sources, the AC/DC and DC/DC converters, are placed in an external power box, away from the output nodes.

Linear regulators are used to regulate the supply voltage down to the final value.

The external power box outputs a voltage just a few volts above the output voltage, controlled by the PS48402 module. This minimizes power dissipation and generated heat.

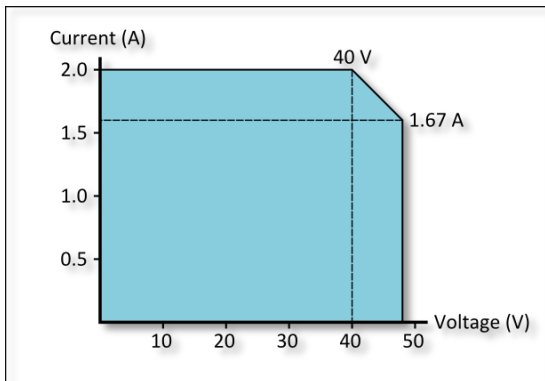
The linear post-regulation used in the PS48402 ensure output noise levels in an order of magnitude lower than competitor DC/DC-conversion based output stages.

## High accuracy and precision

16-bit DACs and ADCs with a high accuracy and precision allow fine control on the setting of output voltage and current, and reading back the actual output values. With 0.74mV and 35uA resolution the step size is better than 0.0015% of the full scale.

## More power

The PS48402 provides the highest power in its class: each channel can provide up to 80 Watt. When the programmed voltage and current setting exceed the maximum output power, the values are automatically adjusted within safe limits.

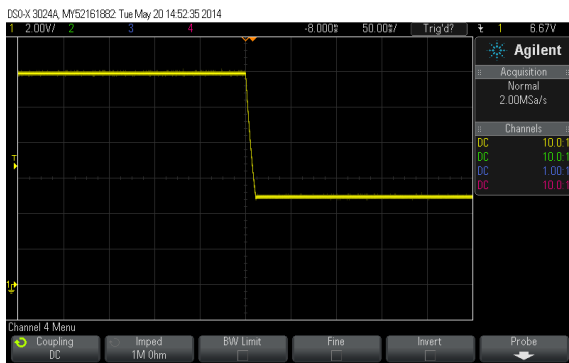


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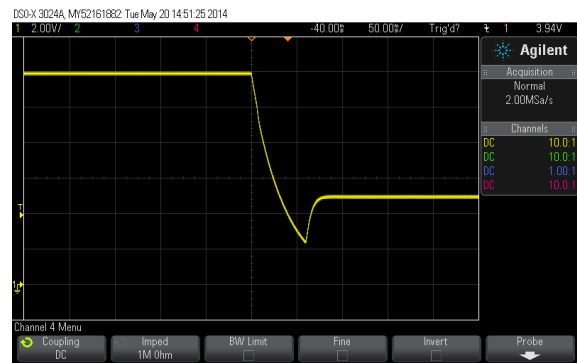
## Accurate step response

The topology of the PS48402 enables a quick response on changes in output voltage and output current, where competitors' DC/DC conversion based topology can show uncontrolled glitches.

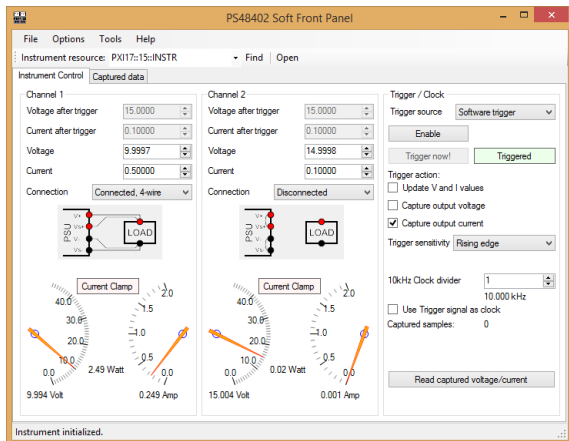
Also a quick change in output load is handled without any problems.



PS48402 step response (12V-5V step programmed, 82Ω load)



Competitor step response (12V-5V step programmed, 82Ω load)



## Software

### Soft Front Panel

A Soft Front Panel application allows you to quickly get started with the instrument. Advanced features such as updating the outputs and starting a record are supported as well.

The Soft Front Panel runs on any Windows computer that has the Microsoft .NET framework 2.0 or newer installed (Windows XP/Vista/7/8, x86/x64).

### Instrument drivers

The provided instrument drivers allow controlling the instrument under a wide variety of programming environments, including Microsoft Visual Studio (C, C++, C#, Visual Basic, VB.NET etc), NI LabWindows and LabVIEW, etc. The driver source code is provided and the driver is fully documented.

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## Specifications

### Electrical characteristics

<b>Output Voltage</b>	0 to 48V per channel
<b>Voltage setting resolution</b>	0.74mV (16-bit)
<b>Voltage setting accuracy</b>	±0.2% of programmed value ±25mV
<b>Load regulation</b>	0.1% of programmed value + 5mV (10 to 90% load change)
<b>Output current</b>	2A max per channel. Above 40V linearly de-rating to 1.67A (80W max)
<b>Current limit resolution</b>	35µA (16-bit)
<b>Current limit accuracy</b>	0.5% of programmed value ±10mA
<b>Sense line regulation area</b>	0.5V (sum of both sense lines)
<b>Output ripple (typical)</b>	<3 mV RMS under full load (Bandwidth 20Hz - 1MHz)
<b>Voltage Read back resolution</b>	0.74mV (16-bit)
<b>Voltage Read back accuracy</b>	±0.1% of reading ±10mV
<b>Current read back resolution</b>	35µA (16-bit)
<b>Current read back accuracy</b>	±0.2% of reading ±5mA
<b>Rise time</b>	1Volt/ms (typical at full load)
<b>Trigger sources</b>	Software, Front, PXI0..7, PXI Star
<b>Front Trigger input</b>	Floating opto-coupler input (220 Ohm in series with a diode)
<b>Front Trigger level</b>	4.0V - 12V (approx. 10mA - 50mA)
<b>Trigger pulse low / high time</b>	min. 20µs
<b>Trigger actions</b>	Update $V_{OUT}$ and $I_{OUT}$ , Capture $V_{OUT}$ or $I_{OUT}$ , Update $V_{OUT}$ and $I_{OUT}$ & Capture $V_{OUT}$ or $I_{OUT}$
<b>Capture memory depth</b>	8k per channel
<b>Maximum capture frequency</b>	10kHz
<b>Capture clock sources</b>	Internal sample clock, Trigger source
<b>Voltage to chassis (any pin)</b>	60V DC (Safety limit. Design breakdown voltage >250V DC)
<b>Insulation resistance</b>	>100MΩ
<b>Operating temperature</b>	0°C to 50°C
<b>External AC/DC box input range</b>	100-240V AC, 50/60Hz

### Physical characteristics

#### PS48402 module:

<b>Dimensions</b>	3U, 1-slot, PXI/CompactPCI module (hybrid slot compatible);
<b>Weight</b>	185 g

#### External AC/DC converter:

<b>Dimensions</b>	20.5 cm x 17.5 cm x 5.5 cm
<b>Weight</b>	1750g
<b>Cable length</b>	1 m (other lengths on request)



External AC/DC converter

## Ordering information

### PS48402

Dual-channel PXI programmable Power Supply

**Includes:** PS48402 PXI card, external AC/DC adapter + interconnect cable and power cord, CD-ROM with Soft Front Panel software, compiled driver and driver source, driver documentation and user manual, Certificate of Calibration and two AKZ1550/4-3.81-GREEN connectors.

## Related products

**PS48401:** Single channel PXI Programmable Power Supply, chassis-powered.

**ATX-Hybrid:** Applicos ATX style high-performance test system chassis combined with 6 PXI slots.