

# AXS844x Source and Measurement Unit Family



## TECHNICAL DATA SHEET

PXI

VXI

LAN

cPCI

PXIe

GPIB

USB

RS232  
485

external  
PCIe

### Features

- Extreme low noise with linear output stage
- Up to 4 independent channels with 200 W<sub>DC</sub> each
- Configurable as 2 independent channels with 400 W<sub>DC</sub> each or 1 channel with 800 W<sub>DC</sub>
- Programmable output current up to 100 A
- Programmable output voltage up to 400 V<sub>DC</sub>
- Very fast and programmable rise and fall times
- Integrated contact check
- Integrated voltage measurement unit
- Integrated current measurement unit
- Fully isolated design, isolated inputs and outputs
- Especially designed for automatic test equipment and high throughput testing of e.g. LEDs, MOSFETs and diodes
- Short rise and fall times due to integrated sink capability
- Trigger inputs and outputs

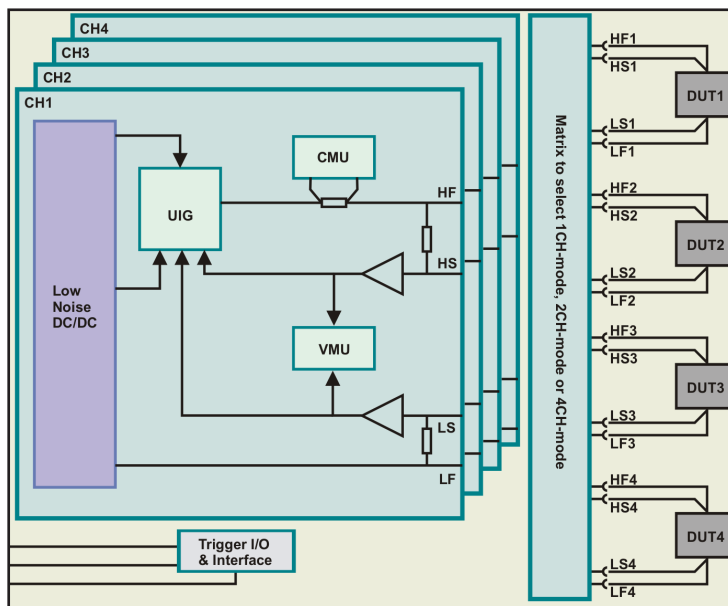
## Product Information

The AXS844x Source and Measurement Unit family is designed for high throughput semiconductor testing. It is perfect for the very fast and precise measurement of e.g. LEDs, MOSFETs and diodes.

The linear output stage with a very short rise time allows current pulses up to 100A. Three voltage ranges (100V, 200V, 400V) and ten current ranges (20  $\mu$ A... 100A) allow accurate programming of the output.

With two integrated measurement units for voltage (VMU) and current (CMU) all high current tests of power semiconductors can be done.

The AXS844x devices are able to generate current- or voltage pulses with automated measurement after a programmed delay. A versatile trigger engine with different trigger in- and outputs allows synchronization with additional equipment.

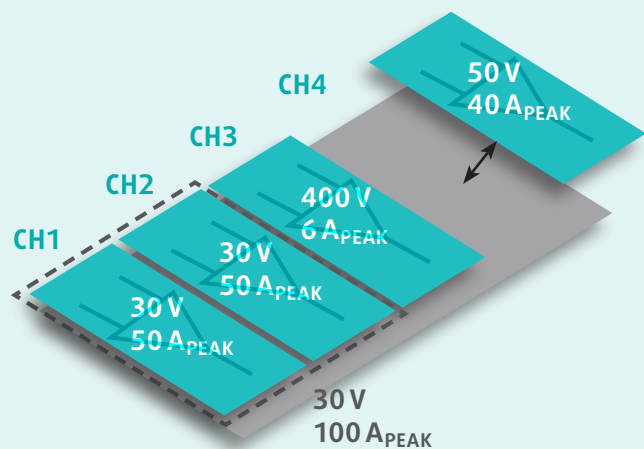


Ordering Option	Comment
<b>AXS8441</b>	1 channel output
<b>AXS8442</b>	1 or 2 channel output
<b>AXS8444</b>	1, 2 or 4 channel output
<b>Option EXTVOLT</b>	Extended output voltage range
<b>Option PCG</b>	Primary current generator
<b>Option GPIB<sup>1</sup></b>	GPIB interface
<b>Option USB<sup>1</sup></b>	USB 2.0 interface
<b>Option LAN<sup>1</sup></b>	Ethernet interface
<b>Option EPCIE<sup>1</sup></b>	External PCIe interface
<b>Option FE</b>	Front touch display
<b>Option ECR-L</b>	Extended current ranges L
<b>Option ECR-H</b>	Extended current ranges H
<b>Option RMK</b>	19" rack mounting kit

<sup>1</sup> One of the interface options is mandatory.

## Modular Concept

Due to the modular concept of this unit, it is easily possible to customize the power stage and output specification. The hardware architecture of the AXS844x family supports output currents up to 100A and output voltages up to 400V. The maximum static output power is limited to 800W and the maximum pulse output power can be up to 10kW. A mixture of output channels with different specification is possible.



Example configuration

General	Specification	Comment
AC line voltage	100...250 V <sub>AC</sub> ; 47 Hz...63 Hz	
Power consumption	<1500 W	
Operating temperature	0...40°C	
Operating altitude	<2,000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25...70°C	
Size	19" x 6U x 690 mm	
Weight	≈40 kg	

Voltage Control Unit	Specification	Comment
Resolution	16 Bit	In all ranges
DC accuracy		
Gain error	±0.05% of value	
Offset error	±0.10% of full scale	
Voltage drop at force cable	±5 V	Maximum regulated voltage drop
Output voltage		Programmable output voltage
Range 1	-50 V...+100 V	
Range 2	-50 V...+200 V	Additionally with option EXTVOLT
Range 3	-50 V...+400 V	Additionally with option EXTVOLT
Pulse length	100 μs...DC	Pulse mode
Maximum capacitive load		
Ranges ±2...±100 A	<500 μF	
Ranges ±20...±200 mA	<300 nF	
Ranges ±20 μA...±2 mA	<10 nF	
Slew rate	1 V/ms...1,500 V/ms	Software programmable

Current Control Unit	Specification	Comment
Resolution	16 Bit	In all ranges
DC accuracy		Programmable output current
Range -100...+100 A	±(1.00% of value + 1.00% of full scale)	Only in pulse mode (Option ECR-H)
Range -8...+8 A	±(0.20% of value + 0.20% of full scale)	Only in 1 channel mode
Range -4...+4 A	±(0.10% of value + 0.10% of full scale)	Only in 1 and 2 channel mode
Range -2...+2 A	±(0.05% of value + 0.05% of full scale)	In 1, 2 and 4 channel mode
Range -200...+200 mA	±(0.05% of value + 0.05% of full scale)	In 1, 2 and 4 channel mode
Range -20...+20 mA	±(0.05% of value + 0.05% of full scale)	In 1, 2 and 4 channel mode
Range -2...+2 mA	±(0.05% of value + 0.05% of full scale)	In 1, 2 and 4 channel mode (Option ECR-L)
Range -200...+200 μA	±(0.10% of value + 0.10% of full scale)	In 1, 2 and 4 channel mode (Option ECR-L)
Pulse length	100 μs...DC	Pulse mode
Maximum capacitive load		
Ranges ±20 mA...±100 A	<100 nF	PCG mode
Ranges ±20 μA...±2 mA	<10 nF	PCG mode
Slew rate	10 μA/ms...600 A/ms	Software programmable in PCG mode; depends on current range

**Notes:** All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time). Product specification and description in this document are subject to change without notice.

Voltage Measurement	Specification
<b>Resolution</b>	20Bit
<b>Filter frequencies</b>	100Hz, 1 kHz, 10kHz, 100kHz
<b>DC accuracy<sup>1</sup></b>	
Range 100mV	±0.25 % of full scale
Range 1V	±0.15 % of full scale
Range 10V	±0.1 % of full scale
Range 100V	±0.1 % of full scale
Range 400V	±0.1 % of full scale additionally with option EXT VOLT

Current Measurement	Specification
<b>Resolution</b>	20Bit
<b>Filter frequencies</b>	100Hz, 1 kHz, 10kHz, 100kHz
<b>DC accuracy<sup>1,2</sup></b>	
Range 100 A	±1.0% of full scale
Range 8 A	±0.2% of full scale
Range 4 A	±0.1% of full scale
Range 2 A	±0.05% of full scale
Range 200mA	±0.05% of full scale
Range 20mA	±0.05% of full scale
Range 2 mA	±0.05% of full scale
Range 200µA	±0.1% of full scale
Range 20µA	±0.2% of full scale

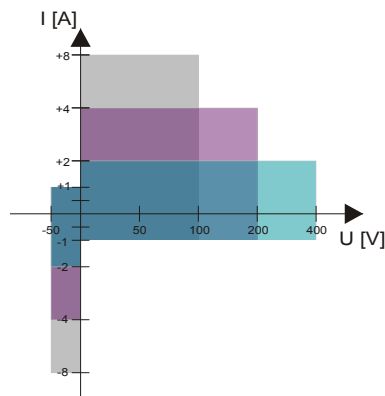
Mode <sup>3</sup>	Output 1	Output 2	Output 3	Output 4
<b>1 channel</b>	-50 ... 400V / -2 ... 2A -50 ... 200V / -4 ... 4A -50 ... 100V / -8 ... 8A			
<b>2 channel</b>	-50 ... 400V / -1 ... 1A -50 ... 200V / -2 ... 2A -50 ... 100V / -4 ... 4A		-50 ... 400V / -1 ... 1A -50 ... 200V / -2 ... 2A -50 ... 100V / -4 ... 4A	
<b>4 channel</b>	-50 ... 400V / -0.5 ... 0.5A -50 ... 200V / -1 ... 1A -50 ... 100V / -2 ... 2A	-50 ... 400V / -0.5 ... 0.5A -50 ... 200V / -1 ... 1A -50 ... 100V / -2 ... 2A	-50 ... 400V / -0.5 ... 0.5A -50 ... 200V / -1 ... 1A -50 ... 100V / -2 ... 2A	-50 ... 400V / -0.5 ... 0.5A -50 ... 200V / -1 ... 1A -50 ... 100V / -2 ... 2A

<sup>1</sup> With 100Hz filter and 20 samples with an interval of 1 ms.

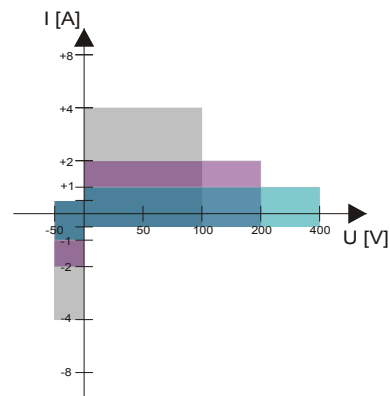
<sup>2</sup> Current measurement range is equal to generator source range.

<sup>3</sup> 200V and 400V ranges wide.

### AXS8444/AXS8442 in 1 channel mode or AXS8441



### AXS8444 in 2 channel mode or AXS8442



### AXS8444 in 4 channel mode

