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AXC760x
100 A High Current SMU Family

VXI instruments
the test solutions provider



TECHNICAL DATA SHEET

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- Extreme low noise with linear output stage
- Output current up to 100 A pulse mode
- Output current up to 20 A (temp. control)
- Programmable output voltage up to 50 V
- Very fast rise time (50 A/µs)
- Programmable current pulse
- Integrated voltage measurement unit with voltage monitor
- Integrated current measurement unit with current monitor
- Front touch display available

Product Information

The AXC760x 100 A High Current Source and Measurement Unit family was designed for semiconductor and high throughput testing.

Very fast linear output stage

The very fast rise time allows short current pulses up to 100 A with a programmable pulse length. Three voltage ranges allow accurate programming of the output voltage.

Integrated measurement units...

Together with the integrated voltage measurement unit (VMU) and the integrated current measurement unit (CMU) all high current tests of power semiconductor can be done.

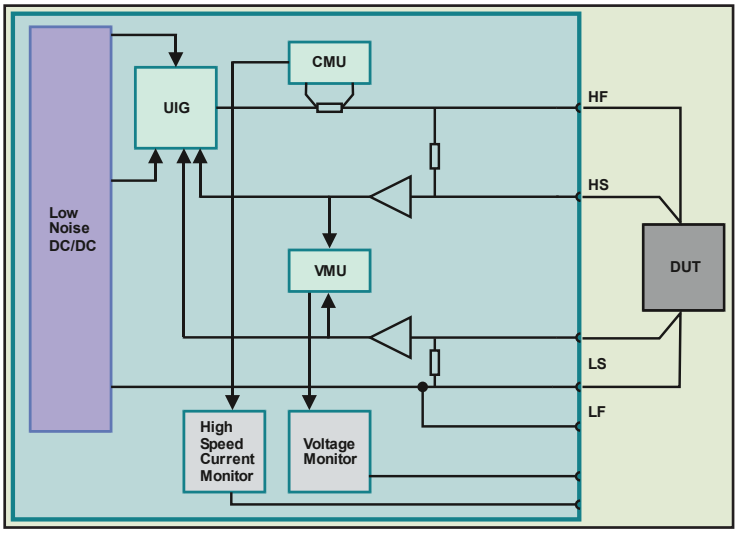
...with monitor signals

Output current and voltage drop on the load can be measured with an oscillocope in a very easy way using the integrated monitor outputs.

Two operation modes

In "Static Current" operation mode an output current up to 20 A can be set. The source can provide a continuous current up to 10 A without time limit. In addition, the use of the integrated temperature control circuit allows the generation of output currents of up to 20 A as long as the maximum power dissipation is not exceeded.

In "Pulsed Current" operation mode output current pulses up to 100 A can be generated. The pulse duration can be configured from 100 µs to 2 ms (8 ms at the AXC7608).
An integrated "Ixt limiter" monitors the maximum current-time product of 100 A x 2 ms (8 ms at the AXC7608). This allows a multitude of current-pulse-length combinations.



Ordering Option	Comment
AXC7603	100 A / 50 V / 2 ms
AXC7608	100 A / 40 V / 8 ms
Option GPIB[1]	GPIB interface
Option USB[1]	USB 2.0 interface
Option LAN[1]	Ethernet interface
Option EPCIE[1]	External PCIe interface
Option FE	Front touch display
Option HIRES	High resolution volt meas.
Option RMK	19" rack mounting kit

[1] One of the interface options is mandatory.

General	Specification	Comment
AC line voltage	230 V_{AC} ±10%	
AC line frequency	47 Hz ... 63 Hz	
Power consumption	<2,000 W	
Operating temperature	0 ... 50°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 455 mm	
Weight	≈32 kg	
Electrical safety	According EN61010-1	
Isolation output to PE	100 V CAT I, Pollution Degree 2	

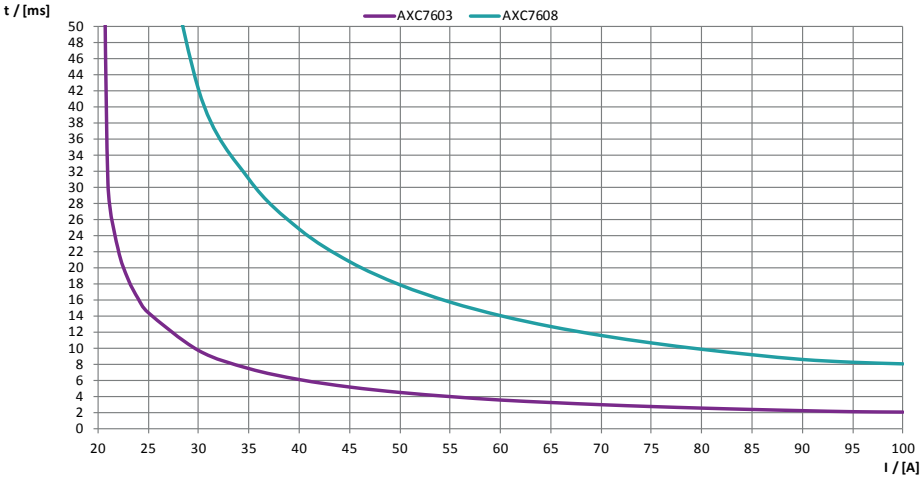
Voltage Control Unit	Specification	Comment
Resolution	16 Bit	In all ranges
DC accuracy		
Gain error	±0.1% of value	
Offset error	±0.1% of full scale	
Voltage drop at force cable	±8 V	Maximum regulated voltage drop
Output voltage		Programmable output voltage
Range 1	-1 V ... +1 V	
Range 2	-10 V ... +10 V	
Range 3	-50 V ... +50 V (AXC7603) -40 V ... +40 V (AXC7608)	

Current Control Unit	Specification	Comment
Resolution	16 Bit	
DC accuracy		
Gain error	±1.0% of value	
Offset error	±1.0% of full scale	
Pulse length	100 µs ... DC	
Maximum output current		
Continous current	-20 A ... +20 A	With temperature control
Continous current	-10 A ... +10 A	Without temperature control
Pulse current[1]	-100 A ... +100 A	Maximum pulse length see "IxT-Limiter" diagram
Minimum pulse length	100 µs	Fixed to ≥2 ms with option HIRES

[1] See "IxT-Limiter" diagram.

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.

IxT-Limiter – Maximum pulse length in milliseconds depending upon the output current														
I [A]	100	90	80	75	70	65	60	55	50	45	40	35	30	25
$t_{AXC7603}$	2.00	2.18	2.50	2.69	2.92	3.19	3.50	3.93	4.45	5.12	6.05	7.42	9.67	14.20
$t_{AXC7608}$	8.00	8.55	9.82	10.61	11.53	12.65	14.00	15.68	17.85	20.72	24.78	31.00	42.14	100.00



The integrated "Ixt limiter" provides a multitude of current - pulse length combinations while monitoring the maximum current-time product.

Voltage Measurement	Specification
Resolution	16 Bit
Filter frequencies[1]	100 Hz, 1 kHz, 10 kHz, 100 kHz
DC accuracy[2]	
Range 100 mV (opt. HIRES)	±0.5 % of full scale
Range 1 V	±0.1 % of full scale
Range 10 V	±0.1 % of full scale
Range 100 V	±0.1 % of full scale

Current Measurement	Specification
Resolution	16 Bit
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
DC accuracy[2]	
Range 10 A	±1.0% of full scale
Range 100 A	±1.0% of full scale

Voltage Monitor	Specification
Output voltage	+5 V equivalent to +full scale in each range
Internal resistance	10 k
Accuracy	±2 % of full scale

Current Monitor	Specification
Output voltage	+5 V equivalent to +full scale in each range
Internal resistance	10k
Accuracy	±2% of full scale

1 The 100 mV range supports filter frequencies of 100 Hz and 1 kHz only.
2 With 100 Hz filter and 20 samples with an interval of 1 ms.

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