

AXS7720 Multichannel Source Measurement Unit



TECHNICAL DATA SHEET

PXI

VXI

LAN

cPCI

PXIe

GPIB

USB

RS232
485

external
PCIe

Features

- Extremely low noise with linear output stage
- Fully isolated design, isolated input and outputs
- Fast measurement of current in nA range
- Especially designed for automatic test equipment and high throughput testing
- Fast rise and fall times due to integrated sink capability
- Integrated matrix and digital I/Os
- Multiple interfaces available (LAN, USB, GPIB)
- Autosensing
- Digital calibration

Product Information

Multichannel source and measurement unit

The AXS7720 is a high precision, high speed multichannel source and measurement unit which is designed for automated high throughput testing.

Each function unit (VMU, CMU, generator) is fully isolated to avoid ground loops and common mode errors.

Programmable rise and fall times

The fast low noise linear bipolar power stage provides full four-quadrant source and sink capability at very fast rise and fall times even at high capacitive loads. The rise and fall times are programmable.

Two power ranges

With its two power ranges, 50V/150mA and 150V/50mA the AXS covers a wide range of different loads.

CMU and VMU with monitor outputs

The integrated monitor outputs makes debugging very easy. With the integrated filter

stages high precise measurements can be done even in high noisy environment.

Integrated high flexible relay matrix

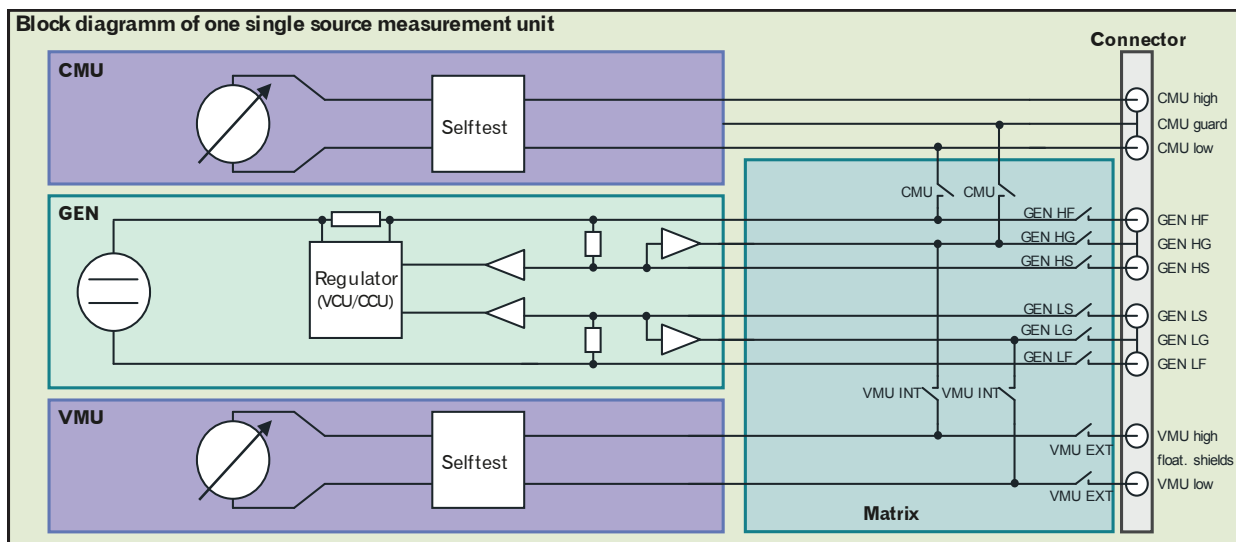
The integrated relay matrix is replaceable for fast service and allows high sophisticated measurements without external connections.

Autosensing protects devices under test

- Autosensing. If the sense line is not connected, the output terminals are automatically used as the sensing point.
- Broken sense line. The output voltage will be reduced automatically about the voltage drop across the load line.
- Shorted sense lines. The output voltage will be limited to about 5V above the programmed value.

Multiple interfaces available

Interfaces for LAN and USB are included (Optional: GPIB) to offer an easy communication with most usual control devices.



Ordering Information	Comment
Option GPIB	IEEE 488 interface
Option RMK	19" Rack mounting Kit
Option FE (on request)	Front panel display

General	Specification	Comment
AC line voltage	230 V _{AC} ±10%	
AC line frequency	47 Hz...63 Hz	
Power consumption	<150 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 3U x 455 mm	
Weight	≈15 kg	
Electrical safety	According EN61010-1	
Isolation output to PE	230 V CAT I, Pollution Degree 2	

Voltage Control Unit	Specification	Comment
Resolution	16 Bit	In all ranges
Compensation units	4	
DC accuracy		
Gain error	±0.05% of full scale	
Offset error	±0.05% of maximum range (150 V)	
Output ratings		
Power range 1	±50 V / ±150 mA	Programmable range
Power range 2	±150 V / ±50 mA	Programmable range
Slew rate	1 ... 1 000 V/ms	Programmable range

Current Control Unit	Specification	Comment
Resolution	16 Bit	In all ranges
Compensation units	8 (2x4)	4 per positive/negative current controller
Range 1		
Gain error	-10 μA _{DC} ... +10 μA _{DC}	Programmable range
Offset error	±0.2% of value ±0.2% of full scale	
Range 2		
Gain error	-100 μA _{DC} ... +100 μA _{DC}	Programmable range
Offset error	±0.1% of value ±0.1% of full scale	
Range 3		
Gain error	-1 mA _{DC} ... +1 mA _{DC}	Programmable range
Offset error	±0.1% of value ±0.1% of full scale	
Range 4		
Gain error	-10 mA _{DC} ... +10 mA _{DC}	Programmable range
Offset error	±0.1% of value ±0.1% of full scale	
Range 5		
Gain error	-150 mA _{DC} ... +150 mA _{DC}	Programmable range
Offset error	±0.1% of value ±0.1% of full scale	

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 Unit	Specification
Resolution	16 Bit
Maximum input voltage	200 V
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
DC accuracy¹	
Range 100 mV	±0.4% of full scale
Range 1 V	±0.2% of full scale
Range 10 V	±0.1% of full scale
Range 100 V	±0.1% of full scale
Range 1 kV	±0.1% of full scale

Current Measurement Unit	Specification
Resolution	16 Bit
Overload protection	180 mA in all ranges
Filter frequencies	100 Hz, 1 kHz, 10 kHz, 100 kHz
DC accuracy¹	
Range 10 nA	±0.5 nA
Range 100 nA	±2.0 nA
Range 1 µA	±10.0 nA
Range 10 µA	±50.0 nA
Range 100 µA	±0.5 µA
Range 1 mA	±5.0 µA
Range 10 mA	±50.0 µA
Range 150 mA	±800.0 µA

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

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

Ordering Information	Comment
Option GPIB	GPIB Interface
Option FE	Front touch display
Option RMK	19" rack mounting kit

¹ Specification takes effect with 100 Hz filter frequency and 20 consecutive measurement with an interval of 1 ms.