

3720A 3721A 3722A 3723A DC Electronic Load Series Specifications

(The warm-up time is 30 minutes. Specifications indicate warranted performance in the 25°C ± 5°C region of the total temperature range).

Model	3720A	3721A	3722A	3723A
Input Ratings				
Current	0 – 30A	0 – 40A	0 – 20A	0 – 30A
Voltage	0 – 80V	0 – 80V	0 – 200V	0 – 200V
Power ¹	250W at 40°C	400W at 40°C	200W at 40°C	350W at 40°C

Input Characteristics	3720A	3721A	3722A	3723A
Input Characteristics				
Minimum Operation Voltage @ Full Scale Current	0.6V	0.6V	1.2V	1.2V

Constant Current Mode	3720A	3721A	3722A	3723A
Low Range Resolution	0 – 3A 0.1mA	0 – 4A 0.1mA	0 – 2A 0.1mA	0 – 3A 0.1mA
Low Range Accuracy	0.1%+5mA	0.1%+5mA	0.1%+5mA	0.1%+5mA
High Range Resolution	0 – 30A 1mA	0 – 40A 1mA	0 – 20A 1mA	0 – 30A 1mA
High Range Accuracy	0.1%+10mA	0.1%+10mA	0.1%+10mA	0.1%+10mA

Constant Voltage Mode	3720A	3721A	3722A	3723A
Range	0 – 80V	0 – 80V	0 – 200V	0 – 200V
Resolution	1mV	1mV	2mV	2mV
Accuracy	0.1%+10mV	0.1%+10mV	0.1%+25mV	0.1%+25mV

Constant Resistance Mode	3720A	3721A	3722A	3723A
Low Range Resolution	0.02 – 2Ω 0.1mΩ	0.02 – 2Ω 0.1mΩ	0.0666 – 6.66Ω 0.1mΩ	0.0666 – 6.66Ω 0.1mΩ
Low Range Accuracy @ I>4A	0.5%+12mΩ	0.5%+12mΩ	0.5%+40mΩ	0.5%+40mΩ
Middle Range Resolution	2 – 200Ω 8.6uS ²	2 – 200Ω 8.6uS	6.66 – 666Ω 2.6uS ²	6.66 – 666Ω 2.5uS
Middle Range Accuracy @ V>8V	0.3%+1.25mS	0.3%+1.25mS	0.3%+375mS	0.3%+375mS
High Range Resolution	20 – 2000Ω 0.96uS	20 – 2000Ω 0.96uS	66.6 – 6660Ω 0.29uS	66.6 – 6660Ω 0.29uS
High Range Accuracy @ V>8V	0.3%+0.625mS	0.3%+0.625mS	0.3%+188mS	0.3%+188mS

Constant Power Mode	3720A	3721A	3722A	3723A
Range	0 – 250W	0 – 400W	0 – 200W	0 – 350W
Resolution @ P<100W	1mW	1mW	1mW	1mW
Resolution @ P≥100W	10mW	10mW	10mW	10mW
Accuracy	0.2%+600mW	0.2%+600mW	0.2%+600mW	0.2%+600mW

Current Measurement	3720A	3721A	3722A	3723A
Low Range Resolution	0 – 3A 0.1mA	0 – 4A 0.1mA	0 – 2A 0.1mA	0 – 3A 0.1mA
Low Range Accuracy	0.05%+4mA	0.05%+4mA	0.05%+4mA	0.05%+4mA
High Range Resolution	0 – 30A 1mA	0 – 40A 1mA	0 – 20A 1mA	0 – 30A 1mA
High Range Accuracy	0.05%+8mA	0.05%+8mA	0.05%+8mA	0.05%+8mA

Voltage Measurement	3720A	3721A	3722A	3723A
Range	0 – 80V	0 – 80V	0 – 200V	0 – 200V
Resolution	1mV	1mV	1mV	1mV
Accuracy	0.1%+8mV	0.1%+8mV	0.1%+50mV	0.1%+50mV

Power Measurement	3720A	3721A	3722A	3723A
Range	0 – 250W	0 – 400W	0 – 200W	0 – 350W
Resolution @ P<100W	1mW	1mW	1mW	1mW
Resolution @ P≥100W	10mW	10mW	10mW	10mW
Accuracy	0.1%+600mW	0.1%+600mW	0.1%+600mW	0.1%+600mW

Current Slew Rates	3720A	3721A	3722A	3723A
Range	1mA/us – 3A/us	1mA/us – 4A/us	1mA/us – 2A/us	1mA/us – 3A/us
CCH ³	100uA/us – 300A/us	100uA/us – 400A/us	100uA/us – 200A/us	100uA/us – 300A/us
Resolution	1mA/us	1mA/us	1mA/us	1mA/us
Accuracy ⁴	3% + 10us	3% + 10us	3% + 10us	3% + 10us

Transient Operation	3720A	3721A	3722A	3723A
Transient Mode	Contiguous, Pulse, Toggled	Contiguous, Pulse, Toggled	Contiguous, Pulse, Toggled	Contiguous, Pulse, Toggled
Frequency Range ⁵	0.38Hz – 50kHz	0.38Hz – 50kHz	0.38Hz – 50kHz	0.38Hz – 50kHz
High/Low Time Resolution	0 – 655.35ms 10us	0 – 655.35ms 10us	0 – 655.35ms 10us	0 – 655.35ms 10us
High/Low Time Accuracy	0.2%+10us	0.2%+10us	0.2%+10us	0.2%+10us
Rising/Falling Time Resolution	10us – 655.35ms 10us	10us – 655.35ms 10us	10us – 655.35ms 10us	10us – 655.35ms 10us
Rising/Falling Time Accuracy	0.2%+10us	0.2%+10us	0.2%+10us	0.2%+10us

List Characteristics	3720A	3721A	3722A	3723A
Step Time	10us – 100000s	10us – 100000s	10us – 100000s	10us – 100000s
Resolution	10us	10us	10us	10us
Accuracy	0.2%+10us	0.2%+10us	0.2%+10us	0.2%+10us
Number of Steps	1 – 50	1 – 50	1 – 50	1 – 50
Cycle	1 – 65535	1 – 65535	1 – 65535	1 – 65535
Store Capacity	7 Lists	7 Lists	7 Lists	7 Lists
Expanded Function	Chain	Chain	Chain	Chain



Model	3720A	3721A	3722A	3723A
Battery Discharge				
Discharge Time	1s – 100h	1s – 100h	1s – 100h	1s – 100h
Resolution	1s	1s	1s	1s
Accuracy	0.2%+1s	0.2%+1s	0.2%+1s	0.2%+1s
Battery Capacity	1mAh – 3000Ah	1mAh – 4000Ah	1mAh – 2000Ah	1mAh – 3000Ah
Resolution	1mAh	1mAh	1mAh	1mAh
Accuracy	0.3%+0.01Ah	0.3%+0.01Ah	0.3%+0.01Ah	0.3%+0.01Ah
Short Circuit				
CCL	3.3A	4.4A	2.2A	3.3A
CCH	33A	44A	22A	33A
CV	0V	0V	0V	0V
CRL	0.018Ω	0.018Ω	0.06Ω	0.06Ω
CRM	1.8Ω	1.8Ω	6Ω	6Ω
CRH	18Ω	18Ω	60Ω	60Ω
CPV	270W	420W	220W	370W
CPC	0W	0W	0W	0W
Maximum Slew Rate				
Current	3A/us	4A/us	2A/us	3A/us
Voltage	0.6V/us	0.6V/us	0.6V/us	0.6V/us
Programmable Open Circuit	≥20kΩ	≥20kΩ	≥20kΩ	≥20kΩ
Trigger Input				
Trigger Level	TTL falling edge	TTL falling edge	TTL falling edge	TTL falling edge
Trigger Pulse Width	≥10us	≥10us	≥10us	≥10us
Maximum Input Levels				
Current	33A	44A	22A	33A
Voltage	84V	84V	210V	210V
Protection Features	OV, OC, OP, OT, RV	OV, OC, OP, OT, RV	OV, OC, OP, OT, RV	OV, OC, OP, OT, RV
Reverse Current Capacity				
Input OFF	25A	30A	25A	25A
Input ON	40A	50A	35A	40A
Ripple and Noise				
Current(rms/p-p)	3mA/30mA	3mA/30mA	3mA/30mA	3mA/30mA
Voltage(rms)	5mV	5mV	12mV	12mV
Environmental Conditions				
Temperature	0 – 50°C	0 – 50°C	0 – 50°C	0 – 50°C
Relative Humidity	≤85%	≤85%	≤85%	≤85%
Remote Interface ⁶	RS232, GPIB, USB	RS232, GPIB, USB	RS232, GPIB, USB	RS232, GPIB, USB
Programming Language	SCPI	SCPI	SCPI	SCPI
AC Input				
Voltage	AC110V or AC220V ±15%	AC110V or AC220V ±15%	AC110V or AC220V ±15%	AC110V or AC220V ±15%
Frequency	48 to 63Hz	48 to 63Hz	48 to 63Hz	48 to 63Hz
Net Weight	5.8kg	5.8kg	5.8kg	5.8kg

- Maximum continuous power available is derated linearly from 100% of maximum at 40°C, to 75% of maximum at 50°C.
- Conductance (S) = 1 / Resistance (Ω). The siemens is the SI derived unit of conductance, and the symbol is "S".
- The set level is 10 times larger than the slew rate in CCL mode.
- The actual transition time is defined as the time required for the input to change from 10% to 90% or from 90% to 10% of the programmed excursion.
- Transient frequency depends on the time for high/low level and rising/falling edge.
- Full remote control via RS232 with optional GPIB and USB.

