

KEYSIGHT TECHNOLOGIES (AGILENT HP)

N3301A

The Keysight N3301A (formerly Agilent N3301A) is a compact, 2-slot programmable DC electronic load mainframe designed for high-density, high-speed test systems. Operating with up to two single-slot modules or one double-slot module, it provides a flexible and modular load solution with built-in GPIB and RS-232 control, making it ideal for high-volume automated testing of power supplies and power components.

SPECIFICATIONS

General

Interfaces	GPIB (IEEE-488), RS-232
Display	Vacuum Fluorescent Display (VFD)
Warm-Up Time	30 minutes
Recommended Calibration Cycle	1 year
Store/Recall States	10 non-volatile states

Physical

Power Supply	100 - 240 VAC, 48 - 63 Hz, 230 VA max
Operating Temperature	0 °C to 55 °C °C
Dimensions (W×H×D)	213 mm × 177 mm × 404 mm mm
Weight	7.3 kg

Mainframe Capacity

Number of Slots	2
Maximum Module Capacity	2 single-slot modules or 1 double-slot module
Supported Load Modules	N3302A, N3303A, N3304A, N3305A, N3306A, N3307A

Input Ratings and Operating Ranges

Total Power Capacity	Up to 600 W (module dependent)
Maximum Input Power	150 W to 600 W (module dependent)
Maximum Input Voltage	60 V to 240 V (module dependent)
Maximum Input Current	10 A to 120 A (module dependent)

Operating Modes & Accuracy

Constant Power (CP) Range Low	Not supported
Constant Power (CP) Range High	Not supported
Constant Power (CP) Programming Accuracy	Not supported

Transient and Dynamic Characteristics

Transient Mode Frequency Range	0.25 Hz to 10 kHz (module dependent)
Transient Mode Duty Cycle Range	3% to 97% (module dependent)
List Mode Step Duration Range	0.5 ms to 262143 ms
Maximum Number of List Mode Steps	100 steps (module dependent)

Measurement and Readback Accuracy

Power Readback Accuracy	Not supported
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Protection Features

Over-Temperature Protection (OTP)	Yes, thermal sensor shuts down the overloaded module
Reverse Voltage Protection Maximum Current	Equal to maximum rated current of module

Connectivity & Control Interfaces

Analog Programming Input Voltage Range	0 V to 10 V (module dependent)
Current Monitor Output Scale Factor	0 V to 10 V for 0 to full scale current (module dependent)
External Trigger Input	BNC connector, active-low, TTL level
External Trigger Output	BNC connector, active-low, TTL level
Supported Command Sets / Emulations	SCPI (Standard Commands for Programmable Instruments)

Power Input Requirements

Line Voltage Input Range	100 to 240 VAC
Line Frequency Range	48 to 63 Hz
Maximum VA Power Consumption	230 VA

Physical and Mechanical Specifications

Form Factor	Benchtop or Rackmount (4U half-rack size)
Rack Height Units	4U
Net Weight	7.3 kg (16 lb) empty mainframe
Shipping Weight	9.1 kg (20 lb) empty mainframe
Cooling Configuration	Forced air cooling with internal fans

Environmental and Safety Compliance

Storage Temperature Range	-40 °C to 75 °C
Safety Standards Certifications	CSA C22.2 No. 1010.1, IEC 1010-1, UL 3111-1
Electromagnetic Compatibility (EMC) Standards	Conforms to EN 55011 (Group 1, Class A), EN 50082-1

Environmental

Operating Altitude	Up to 2,000 m
Storage Altitude	Up to 15,240 m
Operating Humidity	Up to 95% RH (non-condensing)
Pollution Degree	2
Overvoltage Category	II
Acoustic Noise Level	55 dBA (sound pressure level at 1 meter, typical)

Connectivity

RS-232 Baud Rates	1200, 2400, 4800, 9600, 19200, 38400 bps
GPIO Interface Standard	IEEE-488.2
GPIO Address Range	0 to 30
Digital I/O Connector	14-pin quick-disconnect terminal block

Power

AC Input Fuse (100-120 VAC)	3.15 A, 250 V, Slow-Blow
AC Input Fuse (220-240 VAC)	2.0 A, 250 V, Slow-Blow

Software & Control

Command Language	SCPI
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