

## KEYSIGHT TECHNOLOGIES (AGILENT HP)

# N6705A

The Keysight N6705A DC Power Analyzer Mainframe is a highly integrated, 4-slot modular instrument that combines up to four advanced DC power supplies, a digital multimeter, oscilloscope, arbitrary waveform generator, and data logger into a single compact benchtop solution. Designed to dramatically improve R&D productivity, it eliminates the need for external transducers or complex multi-instrument cabling. Fully programmable and LXI Class C compliant, it features dedicated front-panel controls, color-coded terminals, and a large color display for seamless sourcing and analysis of DC voltage and current.

## SPECIFICATIONS

### General

|                                  |                                                                   |
|----------------------------------|-------------------------------------------------------------------|
| Interfaces                       | GPIO, LAN (10/100 Base-T), USB 2.0 (Host and Device), LXI Class C |
| Display                          | 4.3-inch color TFT-LCD, 480 × 272 resolution                      |
| Cooling System                   | Forced air cooling via internal fans (airflow from sides to rear) |
| Recommended Calibration Interval | 1 year                                                            |

### Physical

|                       |                                                 |
|-----------------------|-------------------------------------------------|
| Power Supply          | 100 - 240 VAC (±10%), 50/60/400 Hz, 1440 VA max |
| Operating Temperature | 0 to 55 °C °C                                   |
| Dimensions (W×H×D)    | 425.6 mm × 177.0 mm × 379.0 mm mm               |
| Weight                | 16 kg (empty mainframe) kg                      |
| Rack Mount Option Kit | N6705U-908                                      |

### Mainframe System Capabilities

|                                        |                                        |
|----------------------------------------|----------------------------------------|
| Number of Slots                        | 4                                      |
| Maximum Total Output Power             | 600 W                                  |
| Compatible Module Series               | Keysight N6700 Series                  |
| Basic Source Modules Compatibility     | 50W, 100W, 300W; up to 100V, up to 20A |
| Precision Source Modules Compatibility | 50W, 100W; up to 50V, up to 3A         |

### Source / Output Performance (Module Dependent)

|                        |                                |
|------------------------|--------------------------------|
| Maximum Output Voltage | Up to 100 V (module dependent) |
| Maximum Output Current | Up to 50 A (module dependent)  |

## Measurement & Digitizer Specs

|                               |                                             |
|-------------------------------|---------------------------------------------|
| Voltmeter Accuracy            | Up to 0.016% + 1.5 mV (module dependent)    |
| Voltmeter Resolution          | Up to 18 bits                               |
| Ammeter Accuracy              | Up to 0.03% + 15 $\mu$ A (module dependent) |
| Ammeter Resolution            | Up to 18 bits                               |
| Scope Digitizer Sampling Rate | 50 kHz                                      |
| Scope Buffer Depth            | 4096 points                                 |
| Scope Digitizer Resolution    | Up to 18 bits                               |

## Arbitrary Waveform Generator (AWG) Capabilities

|                          |               |
|--------------------------|---------------|
| AWG Bandwidth            | Up to 4500 Hz |
| AWG Maximum Output Power | Up to 300 W   |

## Data Logging Functions

|                                 |                                            |
|---------------------------------|--------------------------------------------|
| Datalogger Measurement Interval | 1 ms to 60 s                               |
| Datalogger Maximum Capacity     | 500 M readings per datalog                 |
| Non-Volatile Data Storage       | 64 MB                                      |
| Stored Parameters               | Datalog, scope traces, instrument settings |

## Triggering and Synchronization

|                       |                                     |
|-----------------------|-------------------------------------|
| Digital I/O Pin Count | 8-pin programmable digital I/O port |
|-----------------------|-------------------------------------|

## System Interfaces & Software Support

|                      |                                                       |
|----------------------|-------------------------------------------------------|
| GPIO Interface       | Built-in (IEEE-488.2)                                 |
| LAN Interface        | 10/100 Base-T, LXI Class C compliant                  |
| USB Host Ports       | USB 2.0 on front panel                                |
| USB Device Ports     | USB 2.0 on rear panel                                 |
| LXI Compliance Class | LXI Class C Compliant                                 |
| Command Language     | SCPI (Standard Commands for Programmable Instruments) |

## User Interface

|                               |                                                           |
|-------------------------------|-----------------------------------------------------------|
| Front Panel Physical Controls | Dedicated keys, rotary knobs, and color-coded connections |
|-------------------------------|-----------------------------------------------------------|

## Power and Mechanical Specs

|                          |                      |
|--------------------------|----------------------|
| Form Factor (Rack Units) | 4U (four rack units) |
|--------------------------|----------------------|

## Environmental & Compliance

|                           |               |
|---------------------------|---------------|
| Storage Temperature Range | -30°C to 70°C |
|---------------------------|---------------|

**Power Requirements**

|                     |                                               |
|---------------------|-----------------------------------------------|
| AC Input Voltage    | 100 - 240 VAC                                 |
| AC Input Frequency  | 50 / 60 / 400 Hz                              |
| Maximum Input Power | 1440 VA                                       |
| Power Factor        | 0.99 (typical at nominal input and full load) |

**Environmental**

|                            |                               |
|----------------------------|-------------------------------|
| Maximum Operating Altitude | 2000 m                        |
| Pollution Degree           | 2                             |
| Operating Humidity Range   | Up to 95% RH (non-condensing) |
| Installation Category      | Category II                   |

**Interfaces & Connectivity**

|                          |                    |
|--------------------------|--------------------|
| LAN Connection Speed     | 10/100 Base-T      |
| Rear USB Interface Speed | USB 2.0 High Speed |

**System Features**

|              |            |
|--------------|------------|
| Warm-up Time | 30 minutes |
|--------------|------------|

**Operating Limits**

|                              |                                                       |
|------------------------------|-------------------------------------------------------|
| Maximum Output Float Voltage | ±240 VDC (from any output terminal to chassis ground) |
|------------------------------|-------------------------------------------------------|

**Outputs**

|                              |         |
|------------------------------|---------|
| Number of Channels Supported | Up to 4 |
|------------------------------|---------|

**Rear Panel Connections**

|                            |                                   |
|----------------------------|-----------------------------------|
| Digital I/O Connector Type | 8-pin                             |
| GPIO Connector Type        | 24-pin ribbon, IEEE-488 compliant |
| LAN Connector Type         | RJ-45                             |

**Compliance & Safety**

|                   |                                                                                                 |
|-------------------|-------------------------------------------------------------------------------------------------|
| Safety Compliance | Complies with European Low Voltage Directive, EN 61010-1, UL 61010-1, CAN/CSA-C22.2 No. 61010-1 |
| EMC Compliance    | Complies with European EMC Directive, EN 61326-1, ICES-001, AS/NZS CISPR 11                     |

**TECHNOLOGY**

DC Power Analysis

**APPLICATIONS**

R&D testing, DC power sourcing, current profile measurement, and automated bench test environments

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