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**Data Sheet**

August 14, 2026

AGILENT / KEYSIGHT

## Agilent/Keysight RP7961A

Agilent Keysight RP7961A Regenerative Power System 0 to 500 V 0 to plus or minus 20 A 0 to plus or minus 5 kW The Agilent/Keysight RP7961A is an RP7900 Series two-quadrant regenerative DC power system. OEM data sheet 5992-2335EN lists 0 to 500 V, 0 to plus or minus 20 A, and 0 to plus or minus 5 kW with autoranging output, sub-millisecond command processing, and energy returned to the AC mains. HEV/EV converter test, battery emulation, ATE high-power source/load, and (on 20 kW class) photovoltaic array simulation. The Agilent/Keysight RP7961A is an RP7900 Series two-quadrant regenerative DC power system. OEM data sheet 5992-2335EN lists 0 to 500 V, 0 to plus or minus 20 A, and 0 to plus or minus 5 kW with autoranging output, sub-millisecond command processing, and energy returned to the AC mains. HEV/EV converter test, battery emulation, ATE high-power source/load, and (on 20 kW class) photovoltaic array simulation. Two-quadrant source and regenerative electronic load in one chassis Autoranging output covers many voltage/current combinations at rated power

**MODEL****Agilent / Keysight  
RP7961A****CALIBRATION****Available on  
request****CONDITION****Used****STATUS****In stock****RFQ / SKU****RP7961A****LISTING**<https://aumictechlabs.com/products/rp7961a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

### This unit

The Keysight RP7961A is a bidirectional, regenerative DC power supply engineered for high-power test applications requiring both source and sink capability. Operating as a two-quadrant

system, it sources and sinks power simultaneously, making it ideal for testing energy storage devices, converters, and automotive powertrains. The unit regenerates up to 90% of power back to the grid, reducing operational energy costs and cooling requirements while maintaining measurement accuracy across sensitive test setups.

**Technical Specifications**

Input Power: 400/480 VAC, 3-phase ( $\pm 10\%$  tolerance)

Output Voltage: 0–500 V with autoranging

Output Current:  $\pm 20$  A

Maximum Power: 5 kW

Output Configuration: Two-quadrant (source and sink)

Power Factor: 0.99

Efficiency:  $> 80\%$

Line Regulation:  $< 10$   $\mu$ V (voltage),  $< 10$   $\mu$ A (current)

Physical Format: 3U, 763 × 427 × 132.6 mm, 27.3 kg

**Key Features**

- Autoranging output expands the voltage–current operating envelope
- Sub-millisecond command processing ( $\leq 1$  ms) with fast transient response - voltage rise/fall in 160  $\mu$ s, current rise/fall in 150  $\mu$ s
- Voltage settling to 0.1% in 4 ms; current settling to 0.1% in 3.5 ms
- Integrated arbitrary function generator for transient simulation (step, constant dwell, list modes with up to 65,535 data points)
- Simultaneous voltage and current measurement in averaged or digitized modes
- Battery emulation with programmable resistance (model dependent, up to 50  $\Omega$ )
- Parallel connection capability - stack up to 200 kW power or loading
- Integrated safety features for device and user protection

**Typical Applications**

- Energy storage system validation and battery testing
- DC/DC and AC/DC converter characterization
- Automotive start-stop and HEV/EV power converter testing
- Transient response and dynamic load simulation

**Compatibility & Integration**

LAN (LXI Core), USB, and GPIB interfaces enable integration into automated test environments. Built-in web interface supports remote control via browser and LAN connection.

## Features & description

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From manufacturer datasheet

### **Built-in paralleling so paralleled units share current in the desired CV or CC mode**

Technical Specifications Instrument Type: Bidirectional regenerative DC power system Series Family: Keysight RP7900 Rated Voltage: 0 to 500 V Rated Current Source And Sink: 0 to plus or minus 20 A Rated Power: 0 to plus or minus 5 kW AC Input: 3 phase 400 VAC plus or minus 15 percent and 480 VAC plus or minus 10 percent; L1 L2 L3 PE Package Height: 3 U (5 kW class) CV Ripple Peak To Peak: 500 mV from 20 Hz to 20 MHz CV Ripple RMS: 100 mV from 20 Hz to 10 MHz Load Regulation Voltage: 30 mV Load Regulation Current: 9 mA Voltage Programming Measurement Accuracy: 0.03 percent plus 60 mV programming; 0.03 percent plus 80 mV measurement Current Programming Measurement Accuracy: 0.1 percent plus 12 mA Transient Recovery Time: 500 us Transient Settling Band: 1.25 V CC Ripple RMS Typical: 100 mA Voltage Programming Range: 0.5 to 510 V Voltage Programming Resolution: 10.5 mV Current Programming Range: minus 20.5 A to 20.5 A Current Programming Resolution: 190 uA Resistance Programming Range: 0 to 25 ohm Resistance Programming Resolution: 140 uOhm Resistance Programming Accuracy: 0.08 percent plus 200 uOhm Voltage Rise Fall No Load: 1 ms Comp 0 10 to 90 percent Voltage Settling No Load: 6 ms to 0.1 percent Comp 0

## RP7961A Characteristics / Specifications

| PARAMETER                                | VALUE                                                                                      |
|------------------------------------------|--------------------------------------------------------------------------------------------|
| Instrument Type                          | Bidirectional regenerative DC power system                                                 |
| Series Family                            | Keysight RP7900                                                                            |
| Rated Voltage                            | 0 to 500 V                                                                                 |
| Rated Current Source And Sink            | 0 to plus or minus 20 A                                                                    |
| Rated Power                              | 0 to plus or minus 5 kW                                                                    |
| AC Input                                 | 3 phase 400 VAC plus or minus 15 percent and 480 VAC plus or minus 10 percent; L1 L2 L3 PE |
| Package Height                           | 3 U (5 kW class)                                                                           |
| CV Ripple Peak To Peak                   | 500 mV from 20 Hz to 20 MHz                                                                |
| CV Ripple RMS                            | 100 mV from 20 Hz to 10 MHz                                                                |
| Load Regulation Voltage                  | 30 mV                                                                                      |
| Load Regulation Current                  | 9 mA                                                                                       |
| Voltage Programming Measurement Accuracy | 0.03 percent plus 60 mV programming; 0.03 percent plus 80 mV measurement                   |
| Current Programming Measurement Accuracy | 0.1 percent plus 12 mA                                                                     |
| Transient Recovery Time                  | 500 us                                                                                     |
| Transient Settling Band                  | 1.25 V                                                                                     |
| CC Ripple RMS Typical                    | 100 mA                                                                                     |
| Voltage Programming Range                | 0.5 to 510 V                                                                               |
| Voltage Programming Resolution           | 10.5 mV                                                                                    |
| Current Programming Range                | minus 20.5 A to 20.5 A                                                                     |
| Current Programming Resolution           | 190 uA                                                                                     |
| Resistance Programming Range             | 0 to 25 ohm                                                                                |
| Resistance Programming Resolution        | 140 uOhm                                                                                   |
| Resistance Programming Accuracy          | 0.08 percent plus 200 uOhm                                                                 |
| Voltage Rise Fall No Load                | 1 ms Comp 0 10 to 90 percent                                                               |

| PARAMETER                       | VALUE                                                                                         |
|---------------------------------|-----------------------------------------------------------------------------------------------|
| Voltage Settling No Load        | 6 ms to 0.1 percent Comp 0                                                                    |
| Voltage Speed Full Load Or Comp | Comp 0 1 ms rise/fall and 6 ms settle; Comp 1 15 ms rise/fall and 50 ms settle; current 2 ms  |
| Output Terminal Isolation       | no output terminal more than plus or minus 950 VDC from any other terminal or chassis ground  |
| Command Processing Time         | less than or equal to 1 ms from GPIB command to start of output change                        |
| Constant Dwell ARB Points       | up to 65535 points                                                                            |
| ARB Dwell Range                 | 10.24 us to 0.30 s rounded to 10.24 us                                                        |
| List Steps                      | up to 512 steps; list not supported in primary/secondary on 5 kW and 10 kW RP7931A to RP7963A |
| AC Input VA                     | 6.5 kVA                                                                                       |
| AC Input Current Per Phase      | 8.66 A at 400 VAC                                                                             |
| Efficiency At Full Power        | 91.5 percent                                                                                  |
| Power Factor                    | 0.99 at nominal input and rated power                                                         |
| Weight Typical                  | 27.3 kg (60 lb)                                                                               |
| Autorange Voltage V             | 500 V                                                                                         |
| Autorange Current I             | 20 A                                                                                          |
| Minimum Sink Resistance         | 0.4 ohm                                                                                       |
| Remote Interfaces               | GPIB SCPI 1993 IEEE 488.2; USB 2.0 USB-TMC488; LAN 10/100/1000; LXI 1.5                       |
| Spec Temperature Window         | warranted 0 to 40 C after 30 minute warm-up; local sense unless noted                         |
| Accuracy Conditions             | percent of value plus offset at 25 C plus or minus 5 C; NPLC=1; 1 year                        |
| Parallel Operation              | identical voltage ratings; up to 20 units; up to 600 kW total class                           |
| Sink Duration                   | continuous sink up to 100 percent of rated current                                            |
| Grid Regeneration THD Typical   | 2 percent typical at full load                                                                |

# Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

| Specifications                           |                                                                                            |
|------------------------------------------|--------------------------------------------------------------------------------------------|
| Specifications                           |                                                                                            |
| PARAMETER                                | VALUE                                                                                      |
| Instrument Type                          | Bidirectional regenerative DC power system                                                 |
| Series Family                            | Keysight RP7900                                                                            |
| Rated Voltage                            | 0 to 500 V                                                                                 |
| Rated Current Source And Sink            | 0 to plus or minus 20 A                                                                    |
| Rated Power                              | 0 to plus or minus 5 kW                                                                    |
| AC Input                                 | 3 phase 400 VAC plus or minus 15 percent and 480 VAC plus or minus 10 percent; L1 L2 L3 PE |
| Package Height                           | 3 U (5 kW class)                                                                           |
| CV Ripple Peak To Peak                   | 500 mV from 20 Hz to 20 MHz                                                                |
| CV Ripple RMS                            | 100 mV from 20 Hz to 10 MHz                                                                |
| Load Regulation Voltage                  | 30 mV                                                                                      |
| Load Regulation Current                  | 9 mA                                                                                       |
| Voltage Programming Measurement Accuracy | 0.03 percent plus 60 mV programming; 0.03 percent plus 80 mV measurement                   |
| Current Programming Measurement Accuracy | 0.1 percent plus 12 mA                                                                     |
| Transient Recovery Time                  | 500 us                                                                                     |
| Transient Settling Band                  | 1.25 V                                                                                     |
| CC Ripple RMS Typical                    | 100 mA                                                                                     |
| Voltage Programming Range                | 0.5 to 510 V                                                                               |
| Voltage Programming Resolution           | 10.5 mV                                                                                    |
| Current Programming Range                | minus 20.5 A to 20.5 A                                                                     |
| Current Programming Resolution           | 190 uA                                                                                     |
| Resistance Programming Range             | 0 to 25 ohm                                                                                |
| Resistance Programming Resolution        | 140 u0hm                                                                                   |
| Resistance Programming Accuracy          | 0.08 percent plus 200 u0hm                                                                 |
| Voltage Rise Fall No Load                | 1 ms Comp 0 10 to 90 percent                                                               |
| Voltage Settling No Load                 | 6 ms to 0.1 percent Comp 0                                                                 |

| PARAMETER                       | VALUE                                                                                         |
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| Voltage Speed Full Load Or Comp | Comp 0 1 ms rise/fall and 6 ms settle; Comp 1 15 ms rise/fall and 50 ms settle; current 2 ms  |
| Output Terminal Isolation       | no output terminal more than plus or minus 950 VDC from any other terminal or chassis ground  |
| Command Processing Time         | less than or equal to 1 ms from GPIB command to start of output change                        |
| Constant Dwell ARB Points       | up to 65535 points                                                                            |
| ARB Dwell Range                 | 10.24 us to 0.30 s rounded to 10.24 us                                                        |
| List Steps                      | up to 512 steps; list not supported in primary/secondary on 5 kW and 10 kW RP7931A to RP7963A |
| AC Input VA                     | 6.5 kVA                                                                                       |
| AC Input Current Per Phase      | 8.66 A at 400 VAC                                                                             |
| Efficiency At Full Power        | 91.5 percent                                                                                  |
| Power Factor                    | 0.99 at nominal input and rated power                                                         |
| Weight Typical                  | 27.3 kg (60 lb)                                                                               |
| Autorange Voltage V1            | 500 V                                                                                         |
| Autorange Voltage V2            | 250 V                                                                                         |
| Autorange Voltage V3            | 8 V                                                                                           |
| Autorange Current I1            | 20 A                                                                                          |
| Autorange Current I2            | 10 A                                                                                          |
| Minimum Sink Resistance         | 0.4 ohm                                                                                       |
| Remote Interfaces               | GPIB SCPI 1993 IEEE 488.2; USB 2.0 USB-TMC488; LAN 10/100/1000; LXI 1.5                       |
| Spec Temperature Window         | warranted 0 to 40 C after 30 minute warm-up; local sense unless noted                         |
| Accuracy Conditions             | percent of value plus offset at 25 C plus or minus 5 C; NPLC=1; 1 year                        |
| Parallel Operation              | identical voltage ratings; up to 20 units; up to 600 kW total class                           |
| Sink Duration                   | continuous sink up to 100 percent of rated current                                            |
| Grid Regeneration THD Typical   | 2 percent typical at full load                                                                |

#### Notes

Numeric rows from Keysight RP7900 Series Regenerative Power System data sheet 5992-2335EN model column RP7961A.

### Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: [sales@aumictech.com](mailto:sales@aumictech.com) · +1 (484) 841-9341

#### Aumictech

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NAICS 423690 · 811210 · 541380  
Generated August 14, 2026

Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.