

**Aumictech**

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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent/Keysight RP7941A

Agilent Keysight RP7941A Regenerative Power System 0 to 20 V 0 to plus or minus 400 A 0 to plus or minus 5 kW 400/480 VAC The Agilent/Keysight RP7941A is the 400/480 VAC-input RP7900 Series two-quadrant regenerative DC power system electrically paired with RP7931A. OEM data sheet 5992-2335EN lists 0 to 20 V, 0 to plus or minus 400 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 paralleled high-current 20 V rails. The Agilent/Keysight RP7941A is the 400/480 VAC-input RP7900 Series two-quadrant regenerative DC power system electrically paired with RP7931A. OEM data sheet 5992-2335EN lists 0 to 20 V, 0 to plus or minus 400 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 paralleled high-current 20 V rails. Two-quadrant source and regenerative electronic load in one chassis



MODEL

**Agilent / Keysight
RP7941A**

CALIBRATION

Available on request

CONDITION

Used

STATUS

In stock

RFQ / SKU

RP7941A

LISTING

<https://aumictechlabs.com/products/rp7941a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Keysight RP7941A is a single-output, bi-directional regenerative DC power supply engineered for advanced automated test equipment (ATE) and high-voltage, high-power applications. Operating in two-quadrant mode, it functions simultaneously as a precision power source and regenerative electronic load, returning up to 90% of energy to the grid. The compact 3U-high package integrates source and load

capabilities, reducing footprint and integration complexity while delivering sub-millisecond command processing and autoranging output characteristics.

Technical Specifications

Maximum Voltage Per Output: 20 V
Maximum Current Per Output: ± 400 A
Maximum Power: 5 kW
AC Input Voltage: 400/480 VAC, 3-phase
Number of Outputs: Single output
Operation Mode: Two-quadrant (source and regenerative load)
Command Processing Time: ≤ 1 ms
Regeneration Efficiency: Up to 90% power recovery to grid
Output Ripple & Noise: 30–200 mV peak-to-peak (CV); 3–20 mV rms (CV)
Load Regulation: 1–6 mV (voltage); 13–50 mA (current)
Resistance Programming: 0 to 0.98Ω
Transient Simulation: Step events, arbitrary waveforms (up to 65,535 data points), and lists (up to 512 steps)

Key Features

Autoranging output expands the power curve across voltage and current combinations
Battery emulation with programmable internal resistance and charge-state simulation
Simultaneous voltage and current measurement with averaged or digitized capture modes
Digitized measurement capability for dynamic current and voltage profile analysis

Typical Applications

HEV/EV power converter testing
Energy storage system validation
DC-DC and DC-AC converter characterization
High-current battery simulation and testing

Compatibility & Integration

Connectivity: LAN (LXI Core), USB, and GPIB
Digital Control Port: Seven user-configurable I/O pins
Series: RP7900 Series with 400/480 VAC input (200/208 VAC models available for global deployment)
Weight: 60 lbs (27.3 kg)

Features & description

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 20 V Rated Current Source And Sink: 0 to plus or minus 400 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: 30 mV from 20 Hz to 20 MHz CV Ripple RMS: 3 mV from 20 Hz to 10 MHz Load Regulation Voltage: 1 mV Load Regulation Current: 25 mA Voltage Programming Measurement Accuracy: 0.02 percent plus 2 mV Current Programming Measurement Accuracy: 0.04 percent plus 45 mA Transient Recovery Time: 300 us Transient Settling Band: 0.2 V CC Ripple RMS Typical: 200 mA Voltage Programming Range: 0.02 to 20.4 V Voltage Programming Resolution: 191 uV Current Programming Range: minus 408 A to 408 A Current Programming Resolution: 7.7 mA Resistance Programming Range: 0 to 0.098 ohm Resistance Programming Resolution: 0.8 uOhm Resistance Programming Accuracy: 0.05 percent plus 4 uOhm Voltage Rise Fall No Load: 80 us 10 to 90 percent no load Voltage Settling No Load: 810 us to 0.1 percent of step no load Output Terminal Isolation: no output terminal more than plus or minus 60 VDC from any other terminal or chassis ground

RP7941A Characteristics / Specifications

PARAMETER	VALUE
Instrument Type	Bidirectional regenerative DC power system
Series Family	Keysight RP7900
Rated Voltage	0 to 20 V
Rated Current Source And Sink	0 to plus or minus 400 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	30 mV from 20 Hz to 20 MHz
CV Ripple RMS	3 mV from 20 Hz to 10 MHz
Load Regulation Voltage	1 mV
Load Regulation Current	25 mA
Voltage Programming Measurement Accuracy	0.02 percent plus 2 mV
Current Programming Measurement Accuracy	0.04 percent plus 45 mA
Transient Recovery Time	300 us
Transient Settling Band	0.2 V
CC Ripple RMS Typical	200 mA
Voltage Programming Range	0.02 to 20.4 V
Voltage Programming Resolution	191 uV
Current Programming Range	minus 408 A to 408 A
Current Programming Resolution	7.7 mA
Resistance Programming Range	0 to 0.098 ohm
Resistance Programming Resolution	0.8 uOhm
Resistance Programming Accuracy	0.05 percent plus 4 uOhm
Voltage Rise Fall No Load	80 us 10 to 90 percent no load

PARAMETER	VALUE
Voltage Settling No Load	810 us to 0.1 percent of step no load
Output Terminal Isolation	no output terminal more than plus or minus 60 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	84 percent
Power Factor	0.99 at nominal input and rated power
Weight Typical	27.3 kg (60 lb)
Autorange Voltage V	12.5 V
Autorange Current I	400 A
Minimum Sink Resistance	1.25 mOhm
Remote Interfaces	GPIB SCPI 1993 IEEE 488.2; USB 2.0 USB-TMC488; LAN 10/100/1000; LXI Core 2011
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 15 units in 5992-2335EN; up to 150 kW class in that revision
Sink Duration	continuous sink up to 100 percent of rated current
Grid Regeneration THD Typical	2 percent typical at full load
Paired Low Line Model	RP7931A (200/208 VAC input, same 20 V / 400 A / 5 kW DC ratings)

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	
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PARAMETER	VALUE
Instrument Type	Bidirectional regenerative DC power system
Series Family	Keysight RP7900
Rated Voltage	0 to 20 V
Rated Current Source And Sink	0 to plus or minus 400 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	30 mV from 20 Hz to 20 MHz
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Load Regulation Voltage	1 mV
Load Regulation Current	25 mA
Voltage Programming Measurement Accuracy	0.02 percent plus 2 mV
Current Programming Measurement Accuracy	0.04 percent plus 45 mA
Transient Recovery Time	300 us
Transient Settling Band	0.2 V
CC Ripple RMS Typical	200 mA
Voltage Programming Range	0.02 to 20.4 V
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Current Programming Range	minus 408 A to 408 A
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AC Input VA	6.5 kVA
AC Input Current Per Phase	8.66 A at 400 VAC
Efficiency At Full Power	84 percent
Power Factor	0.99 at nominal input and rated power
Weight Typical	27.3 kg (60 lb)
Autorange Voltage V1	20 V
Autorange Voltage V2	12.5 V
Autorange Voltage V3	0.5 V
Autorange Current I1	400 A
Autorange Current I2	250 A
Minimum Sink Resistance	1.25 mOhm
Remote Interfaces	GPIB SCPI 1993 IEEE 488.2; USB 2.0 USB-TMC488; LAN 10/100/1000; LXI Core 2011
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 15 units in 5992-2335EN; up to 150 kW class in that revision
Sink Duration	continuous sink up to 100 percent of rated current
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Notes

Numeric rows from Keysight RP7900 Series Regenerative Power System data sheet 5992-2335EN model column RP7941A (400/480 VAC twin of RP7931A). DC ratings match the RP7931A/RP7941A column.

Available from Aumictech

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

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

Aumictech

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