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Data Sheet
August 14, 2026

AGILENT / KEYSIGHT

Agilent/Keysight RP7973A

Agilent Keysight RP7973A Regenerative Power System 0 to 2000 V 0 to plus or minus 30 A 0 to plus or minus 20 kW The Agilent/Keysight RP7973A is an RP7900 Series two-quadrant regenerative DC power system. OEM data sheet 5992-2335EN lists 0 to 2000 V, 0 to plus or minus 30 A, and 0 to plus or minus 20 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 RP7973A is an RP7900 Series two-quadrant regenerative DC power system. OEM data sheet 5992-2335EN lists 0 to 2000 V, 0 to plus or minus 30 A, and 0 to plus or minus 20 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	CALIBRATION
Agilent / Keysight RP7973A	Available on request
CONDITION	**STATUS**
Used	In stock
RFQ / SKU	**LISTING**
RP7973A	https://aumictechlabs.com/products/rp7973a-2/

NIST-traceable cal · SAM registered · 30-day returns · NAICS 423690 · 811210 · 541380

This unit

The Keysight RP7973A is a single-output bidirectional regenerative DC power supply operating in two-quadrant mode as both a precision power source and regenerative electronic load. Delivering

up to 20 kW across 0–2000 V and ±30 A, it returns up to 90% of absorbed energy to the grid, reducing operational energy costs and cooling requirements. Fast sub-millisecond command processing and autoranging output characteristics enable efficient testing of energy storage systems, power converters, and battery-emulation applications.The device integrates advanced safety features including anti-islanding protection and fits within a compact 3U rack form factor, consolidating source and load functionality to save integration time and physical space.Technical Specifications Maximum voltage: 2000 V Maximum current: ±30 A Maximum power: 20 kW AC input: 400/480 VAC Output mode: Two-quadrant (source and regenerative load) Regenerative efficiency: Up to 90% energy return to grid THD: Minimum 2% typical at full load Response time: Sub-millisecond command processing Parallel operation: Up to 200 kW combined power or loading Battery emulation: Programmable internal resistance to 50 Ω or 394 Ω (model dependent) Form factor: 3U rack heightKey Features Autoranging output characteristic expands voltage–current operating envelope Anti-islanding safety circuitry ensures grid live status before regenerative operation Battery simulation with configurable internal resistance for state-of-charge emulation Low harmonic distortion supports clean grid interconnectionStandard Connectivity GPIB, Ethernet/LAN (LXI Core 1.5 compliant), USB 2.0 Web interface for remote browser-based controlTypical Applications Energy storage system validation HEV/EV power converter characterization Automotive start-stop system testing Power device and converter evaluationCompatibility & Integration The RP7973A integrates into Keysight's HEV/EV Power Converter Test Solutions ecosystem, including compatibility with measurement systems such as the EV1003A.

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 2000 V Rated Current Source And Sink: 0 to plus or minus 30 A Rated Power: 0 to plus or minus 20 kW AC Input: 3 phase 380 to 480 VAC plus or minus 10 percent; L1 L2 L3 PE after firmware B.06.03.985 Package Height: 3 U (20 kW class) CV Ripple Peak To Peak: 3 V from 20 Hz to 20 MHz CV Ripple RMS: 400 mV from 20 Hz to 10 MHz Load Regulation Voltage: 100 mV Load Regulation Current: 4 mA Voltage Programming Measurement Accuracy: 0.04 percent plus 150 mV Current Programming Measurement Accuracy: 0.03 percent plus 3 mA Transient Recovery Time: 300 us Transient Settling Band: 20 V CC Ripple RMS Typical: 15 mA Voltage Programming Range: plus 2 V to plus 2040 V Voltage Programming Resolution: 20 mV Current Programming Range: minus 30.6 A to plus 30.6 A Current Programming Resolution: 0.6 mA Resistance Programming Range: 0 to 277 ohm Resistance Programming Resolution: 2.2 mOhm Resistance Programming Accuracy: 0.06 percent plus 2.2 mOhm Voltage Rise Fall No Load: 0.2 ms Comp 0 10 to 90 percent Voltage Settling No Load: 1 ms to 0.1 percent Comp 0 Voltage Speed Full Load Or Comp: Comp 0 0.2 ms rise/fall and 1 ms settle; Comp 1 0.5 ms / 2.5 ms; Comp 2 33 ms rise/fall

RP7973A Characteristics / Specifications

PARAMETER	VALUE
Instrument Type	Bidirectional regenerative DC power system
Series Family	Keysight RP7900
Rated Voltage	0 to 2000 V
Rated Current Source And Sink	0 to plus or minus 30 A
Rated Power	0 to plus or minus 20 kW
AC Input	3 phase 380 to 480 VAC plus or minus 10 percent; L1 L2 L3 PE after firmware B.06.03.985
Package Height	3 U (20 kW class)
CV Ripple Peak To Peak	3 V from 20 Hz to 20 MHz
CV Ripple RMS	400 mV from 20 Hz to 10 MHz
Load Regulation Voltage	100 mV
Load Regulation Current	4 mA
Voltage Programming Measurement Accuracy	0.04 percent plus 150 mV
Current Programming Measurement Accuracy	0.03 percent plus 3 mA
Transient Recovery Time	300 us
Transient Settling Band	20 V
CC Ripple RMS Typical	15 mA
Voltage Programming Range	plus 2 V to plus 2040 V
Voltage Programming Resolution	20 mV
Current Programming Range	minus 30.6 A to plus 30.6 A
Current Programming Resolution	0.6 mA
Resistance Programming Range	0 to 277 ohm
Resistance Programming Resolution	2.2 mOhm
Resistance Programming Accuracy	0.06 percent plus 2.2 mOhm
Voltage Rise Fall No Load	0.2 ms Comp 0 10 to 90 percent

PARAMETER	VALUE
Voltage Settling No Load	1 ms to 0.1 percent Comp 0
Voltage Speed Full Load Or Comp	Comp 0 0.2 ms rise/fall and 1 ms settle; Comp 1 0.5 ms / 2.5 ms; Comp 2 33 ms rise/fall
Output Terminal Isolation	no output terminal more than plus or minus 2000 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	23 kVA
AC Input Current Per Phase	36 A at 400 VAC
Efficiency At Full Power	90 percent
Power Factor	0.99 at nominal input and rated power
Weight Typical	37.3 kg (82 lb)
Autorange Voltage V	2000 V
Autorange Current I	30 A
Minimum Sink Resistance	500 mOhm
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 2000 V
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AC Input VA	23 kVA
AC Input Current Per Phase	36 A at 400 VAC
Efficiency At Full Power	90 percent
Power Factor	0.99 at nominal input and rated power
Weight Typical	37.3 kg (82 lb)
Autorange Voltage V1	2000 V
Autorange Voltage V2	666 V
Autorange Voltage V3	15 V
Autorange Current I1	30 A
Autorange Current I2	10 A
Minimum Sink Resistance	500 mOhm
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 RP7973A.

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

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