Datasheet

Compact Programmable AC/DC Power Supply

Stock No. :   Model :

2010451   **RSAS-2050**

CE RS-232 GPIB USB LAN Ext I/O

FEATURES

- Output Rating: AC 0 ~ 350 Vrms, DC 0 ~ ±500 V
- Output Frequency up to 999.9 Hz
- DC Output (100% of Rated Power)
- Output Capacity: 500VA
- Measurement Items: Vrms, Vavg, Vpeak, Irms, IpkH, Iavg, Ipeak, P, S, Q, PF, CF
- Voltage and Current Harmonic Analysis (THDv, THDi)
- Customized Phase Angle for Output On/Off
- Remote Sensing Capability
- OVP, OCP, OPP, OTP, AC Fail Detection and Fan Fail Alarm
- Interface: USB, LAN (std.)
- Built-in External Control I/O and External Signal Input
- Built-in Output Relay Control and Memory Function (up to 10 sets)
- Sequence and Simulation Function (up to 10 sets)
- Support Arbitrary Waveform Function and Built-in Web Server

The RSAS-2050, an AC+DC power source aiming for system integration or desktop applications, provides both rated power output for AC output and rated power output for DC output. Nine RSAS-2050 output modes are available, including 1) AC power output mode (AC-INT Mode), 2) DC power output mode (DC-INT Mode), 3) AC/DC power output mode (AC+DC-INT Mode), 4) External AC signal source mode (AC-EXT Mode), 5) External AC/DC signal source mode (AC+DC-EXT Mode), 6) External AC signal superposition mode (AC-ADD Mode), 7) External AC/DC signal superposition mode (AC+DC-ADD Mode), 8) External AC signal synchronization mode (AC-SYNC Mode), 9) External AC/DC signal synchronization mode (AC+DC-SYNC Mode).

The RSAS-2050 provides users with waveform output capabilities to meet the test requirements of different electronic component development, automotive electrical devices and home appliance, including 1) Sequence mode generates waveform fallings, surges, sags, changes and other abnormal power line conditions; 2) Arbitrary waveform function allows users to store/upload user-defined waveforms; and 3) Simulate mode simulates power outage, voltage rise, voltage fall, and frequency variations. When the RSAS-2050 power source outputs, it can also measure Vrms, Vavg, Vpeak, Irms, Iavg, Ipeak, IpkH, P, S, Q, PF, CF, 40th-order Voltage Harmonic and Current Harmonic. In addition, the Remote sense function ensures accurate voltage output. The Customized Phase Angle for Output On/Off function can set the starting angle and ending angle of the voltage output according to the test requirements. V-Limit, Ipeak-Limit, F-Limit, OVP, OCP, OPP function settings can protect the DUT during the measurement process. In addition to OTP, OCP, and OPP protection, the RSAS-2050 also incorporates the Fan fail alarm function and AC fail alarm function.

The front panel of the RSAS-2050 provides a universal socket, which allows users to plug and use so as to save wiring time. The RSAS-2050 supports I/O interface and is equipped with USB, LAN, External I/O and optional RS-232C and GPIB.

PANEL INTRODUCTION

1. **Air Inlet**
2. **LCD Screen**
3. **Display Mode Select Key**
4. **Function Keys**
5. **Scroll Wheel**
6. **Output Key**
7. **Hardcopy Key**
8. **Lock/Unlock Button**
9. **USB Interface Connector(A Type)**
10. **Power Switch Button**
11. **Output Socket**
12. **External I/O Connector**
13. **Exhaust Fan**
14. **Remote Sensing Input Terminal**
15. **Output Terminal**
16. **Line Input**
17. **External Signal Input/External Synchronized Signal Input**
19. **LAN Connector**
20. **USB Interface Connector(B Type)**

SPECIFICATIONS

INPUT RATING (AC)

NORMINAL INPUT VOLTAGE		100 Vac to 240 Vac
INPUT VOLTAGE RANGE		90 Vac to 264 Vac
PHASE		Single phase, Two-wire
INPUT FREQUENCY RANGE		47 Hz to 63 Hz
MAX. POWER CONSUMPTION		800 VA or less
POWER FACTOR[*1]	100Vac	0.95 (typ.)
	200Vac	0.90 (typ.)
MAX. INPUT CURRENT	100Vac	8 A
	200Vac	4 A

*1. For an output voltage of 100 V/200 V (100V/200V range), maximum current, and a load power factor of 1.

AC MODE OUTPUT RATINGS (AC rms)

VOLTAGE	Setting Range[*1]	0.0 V to 175.0 V / 0.0 V to 350.0 V
	Setting Resolution	0.1 V
	Accuracy[*2]	±(0.5 % of set + 0.6 V / 1.2 V)
OUTPUT PHASE		Single phase, Two-wire
MAXIMUM CURRENT[*3]	100 V	5 A
	200 V	2.5 A
MAXIMUM PEAK CURRENT[*4]	100 V	20 A
	200 V	10 A
POWER CAPACITY		500 VA
FREQUENCY	Setting Range	AC Mode: 40.00 Hz to 999.9 Hz, AC+DC Mode: 1.00 Hz to 999.9 Hz
	Setting Resolution	0.01 Hz (1.00 to 99.99 Hz), 0.1 Hz (100.0 to 999.9 Hz)
	Accuracy	For 45 Hz to 65 Hz: 0.01% of set, For 40 Hz to 999.9 Hz: 0.02% of set
	Stability[*5]	± 0.005%
OUTPUT ON PHASE		0.0° to 359.9° variable (setting resolution 0.1°)
DC OFFSET[*6]		Within ± 20 mV (TYP)

*1. 100 V / 200 V range
*2. For an output voltage of 17.5 V to 175 V / 35 V to 350 V, sine wave, an output frequency of 45 Hz to 65 Hz, no load, DC voltage setting 0V (AC+DC mode) and 23°C ± 5°C
*3. For an output voltage of 1 V to 100 V / 2 V to 200 V, Limited by the power capacity when the output voltage is 100 V to 175 V / 200 V to 350 V.
*4. With respect to the capacitor-input rectifying load. Limited by the maximum current.
*5. For 45 Hz to 65 Hz, the rated output voltage, no load and the resistance load for the maximum current, and the operating temperature.
*6. In the case of the AC mode and output voltage setting to 0 V.

OUTPUT RATING FOR DC MODE

VOLTAGE	Setting Range[*1]	-250 V to +250 V / -500 V to +500 V
	Setting Resolution	0.1 V
	Accuracy[*2]	±(|0.5 % of set| + 0.6 V / 1.2 V)
MAXIMUM CURRENT[*3]	100 V	5 A
	200 V	2.5 A
MAXIMUM PEAK CURRENT[*4]	100 V	20 A
	200 V	10 A
POWER CAPACITY		500 W

*1. 100 V / 200 V range
*2. For an output voltage of -250 V to -25 V, +25 V to +250 V / -500 V to -50 V, +50 V to +500 V, no load, AC volatge setting 0V (AC+DC mode) and 23°C ± 5°C
*3. For an output voltage of 1.4 V to 100 V / 2.8 V to 200 V, Limited by the power capacity when the output voltage is 100 V to 250 V / 200 V to 500 V.
*4. Within 5 ms, Limited by the maximum current.

OUTPUT VOLTAGE STABILITY

LINE REGULATION[*1]	±0.2% or less
LOAD REGULATION[*2]	0.15% @45 - 65Hz; 0.5% @DC, all other frequencies (0 to 100%, via output terminal)
RIPPLE NOISE[*3]	0.7 Vrms / 1.4 Vrms (TYP)

*1. Power source input voltage is 100 V, 120 V, or 230 V, no load, rated output.
*2. For an output voltage of 75 V to 175V/150V to 350V, a load power factor of 1, stepwise change from an output current of 0 A to maximum current(or its reverse), using the output terminal on the rear panel.
*3. For 5 Hz to 1 MHz components in DC mode using the output terminal on the rear panel.

OUTPUT VOLTAGE WAVEFORM DISTORTION RATIO, OUTPUT VOLTAGE RESPONSE TIME, EFFICIENCY

OUTPUT VOLTAGE WAVEFORM DISTORTION RATIO[*1]	0.5 % or less
OUTPUT VOLTAGE RESPONSE TIME[*2]	100 us (TYP)
EFFICIENCY[*3]	70 % or more

*1. At an output voltage of 50 V to 175 V / 100 V to 350 V, a load power factor of 1, and in AC and AC+DC mode.
*2. For an output voltage of 100 V / 200 V, a load power factor of 1, with respect to stepwise change from an output current of 0 A to the maximum current (or its reverse); 10% ~ 90% of output voltage
*3. For AC mode, at an output voltage of 100 V / 200 V, maximum current, and load power factor of 1 and sine wave only.

MEASURED VALUE DISPLAY

VOLTAGE	RMS, AVG Value[*1]	Resolution	0.1 V
		Accuracy[*2]	For 45 Hz to 65 Hz and DC: ±(0.5 % of reading + 0.3 V/0.6 V) For 40 Hz to 999.9 Hz: ±(0.7 % of reading + 0.9 V/1.8 V)
	PEAK Value	Resolution	0.1 V
		Accuracy	For 45 Hz to 65 Hz and DC: ±(|2 % of reading| + 1 V / 2 V)
CURRENT	RMS, AVG Value	Resolution	0.01 A
		Accuracy[*3]	For 45 Hz to 65 Hz and DC:±(0.5 % of reading+0.02 A/0.02 A); For 40 Hz to 999.9 Hz:±(0.7 % of reading + 0.04 A / 0.04 A)
	PEAK Value	Resolution	0.1 A
		Accuracy[*4]	For 45 Hz to 65 Hz and DC:±(|2 % of reading|+0.2 A/0.1 A)
POWER	Active (W)	Resolution	0.1 / 1 W
		Accuracy[*5]	±(2 % of reading + 0.5 W)
	Apparent (VA)	Resolution	0.1 / 1 VA
		Accuracy[*5*6]	±(2 % of reading + 0.5 VA)
	Reactive (VAR)	Resolution	0.1 / 1 VAR
		Accuracy[*5*7]	±(2 % of reading + 0.5 VAR)
LOAD POWER FACTOR		Range	0.000 to 1.000
		Resolution	0.001
LOAD CREST FACTOR		Range	0.00 to 50.00
		Resolution	0.01

SPECIFICATIONS

HARMONIC VOLTAGE	Range	Up to 40th order of the fundamental wave
EFFECTIVE VALUE (RMS)	Full Scale	175 V / 350 V, 100%
PERCENT (%)	Resolution	0.1 V, 0.01%
(AC-INT and 50/60 Hz only)	Accuracy[*8]	Up to 20th ± (0.2 % of reading + 0.5 V / 1 V);
		20th to 40th ± (0.3 % of reading + 0.5 V / 1 V)
HARMONIC CURRENT	Range	Up to 40th order of the fundamental wave
EFFECTIVE VALUE (RMS)	Full Scale	5 A / 2.5 A, 100%
PERCENT (%)	Resolution	0.01 A, 0.01%
(AC-INT and 50/60 Hz only)	Accuracy[*3]	Up to 20th ± (1 % of reading + 0.1 A / 0.05 A);
		20th to 40th ± (1.5 % of reading + 0.1 A / 0.05 A)

*1. The voltage display is set to RMS in AC/AC+DC mode and AVG in DC mode.

*2. AC mode: For an output voltage of 17.5 V to 175 V / 35 V to 350 V and 23 °C ± 5 °C. DC mode: For an output voltage of 25 V to 250 V / 50 to 500 V and 23 °C ± 5 °C.

*3. An output current in the range of 5 % to 100 % of the maximum current, and 23 °C ± 5 °C.

*4. An output current in the range of 5 % to 100 % of the maximum peak current in AC mode, an output current in the range of 5 % to 100 % of the maximum instantaneous current in DC mode, and 23 °C ± 5 °C. The accuracy of the peak value is for a waveform of DC or sine wave

*5. For an output voltage of 50 V or greater, an output current in the range of 10 % to 100 % of the maximum current, DC or an output frequency of 45 Hz to 65 Hz, and 23 °C ± 5 °C.

*6. The apparent and reactive powers are not displayed in the DC mode.

*7. The reactive power is for the load with the power factor 0.5 or lower. *8. An output voltage in the range of 17.5 V to 175 V / 35 V to 350 V and 23 °C ± 5 °C.

OTHERS

PROTECTIONS			OCP, OTP, OPP, FAN Fail
DISPLAY			TFT-LCD, 4.3 inch
MEMORY FUNCTION			10 sets for Store and Recall settings
ARBITRARY WAVE	Number of Memories		16 (nonvolatile)
	Waveform Length		4096 words
INTERFACE	Standard	USB	Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB-CDC
		LAN	MAC Address, DNS IP Address, User Password, Gateway IP Address, Instrument IP Address, Subnet Mask
		EXT Control	External Signal Input; External Control I/O
INSULATION RESISTANCE Between input and chassis, output and chassis, input and output			500 Vdc, 30 MΩ or more
WITHSTAND VOLTAGE Between input and chassis, output and chassis, input and output			1500 Vac, 1 minute
EMC			EN 61326-1 (Class A) EN 61326-2-1/-2-2 (Class A) EN 61000-3-2 (Class A, Group 1) EN 61000-3-3 (Class A, Group 1) EN 61000-4-2/-4-3/-4-4/-4-5/-4-6/-4-8/-4-11 (Class A, Group 1) EN 55011 (Class A, Group1)
Safety			EN 61010-1
Environment	Operating Environment		Indoor use, Overvoltage Category II
	Operating Temperature Range		0 °C to 40 °C
	Storage Temperature Range		-10 °C to 70 °C
	Operating Humidity Range		20 %rh to 80 % RH (no condensation)
	Storage Humidity Range		90 % RH or less (no condensation)
	Altitude		Up to 2000 m
DIMENSIONS & WEIGHT			RSAS-2050 : 285(W)×124(H)×480(D) (not including protrusions); Approx. 11.5 kg

ORDERING INFORMATION

RSAS-2050   500VA Programmable AC/DC Power Source

ACCESSORIES

Safety Guide, Power Cord, Mains Terminal Cover Set, Remote Sense Terminal Cover Set,
GTL-123 Test Lead, GTL-246 USB Cable

FREE DOWNLOAD

USB Driver