ASR-3000 Specifications

The specifications apply when the ASR-3000 is powered on for at least 30 minutes under +20°C~+30°C.

Input ratings (AC rms)

Model		ASR-3200	ASR-3300	ASR-3400
Nominal input voltage		200 Vac to 240 Vac		
Input voltage range		180 Vac to 264 Vac		
Phase		Single phase, Two-wire		
Nominal input Frequency		50 Hz to 60 Hz		
Input frequency range		47 Hz to 63 Hz		
Max. power consumption		2500 VA or less	3750 VA or less	5000 VA or less
Power factor*1	200Vac	0.95 (TYP)		
Max. input current	200Vac	15 A	22.5 A	30 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)

Model		ASR-3200	ASR-3300	ASR-3400
Voltage	Setting Range*1	0.0 V to 200.0 V / 0.0 V to 400.0 V		
	Setting Resolution	0.1 V		
	Accuracy*2	±(1 % of set + 1 V / 2 V)		
Output phase		Single phase, Two-wire		
Maximum current*3	100 V	20 A	30 A	40 A
	200 V	10 A	15 A	20 A
Maximum peak current*4	100 V	120 A	180 A	240 A
	200 V	60 A	90 A	120 A
Load power factor		0 to 1 (leading phase or lagging phase)		
Power capacity		2000 VA	3000 VA	4000 VA
Frequency	Setting range	AC Mode: 40.0 Hz to 999.9 Hz, AC+DC Mode: 1 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	0.02% of set (23 °C ± 5 °C)		
	Stability*5	± 0.005%		
Output on phase		0° to 359° variable (setting resolution 1°)		
DC offset*6		Within ± 20 mV (TYP)		

*1. 100 V / 200 V range

*2. For an output voltage of 20 V to 200 V / 40 V to 400 V, an output frequency of 45 Hz to 65 Hz, no load, and 23℃ ± 5℃

*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 200 V / 200 V to 400 V.
If there is the DC superimposition, the current of AC+DC mode satisfies the maximum current. In the case of lower than 40 Hz, and the power rating temperature, the maximum current will be decrease.

*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 23°C ± 5°C.

Output rating for DC mode

Model		ASR-3200	ASR-3300	ASR-3400
Voltage	Setting Range*1	-285 V to +285 V / -570 V to +570 V		
	Setting Resolution	0.1 V		
	Accuracy*2	±(1 % of set + 1 V / 2 V)		
Maximum current*3	100 V	20 A	30 A	40 A
	200 V	10 A	15 A	20 A
Maximum peak current*4	100 V	120 A	180 A	240 A
	200 V	60 A	90 A	120 A
Power capacity		2000 W	3000 W	4000 W

*1. 100 V / 200 V range
*2. For an output voltage of -285 V to -28.5 V, +28.5 V to +285 V / -570 V to -57 V, +57 V to +570 V, no load, and 23℃ ± 5℃
*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. Limited by the maximum current.

Output voltage stability

Model	ASR-3200	ASR-3300	ASR-3400
Line regulation*1	0.2% or less		
Load regulation*2	0.5% or less (0 to 100%, via output terminal)		
Ripple noise*3	1 Vrms / 2 Vrms (TYP)		

*1. Power source input voltage is 200 V, 220 V, or 240 V, no load, rated output.
*2. For an output voltage of 100 V to 200 V / 200 V to 400 V, 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

Model	ASR-3200	ASR-3300	ASR-3400
Total harmonic distortion(THD)*1	≦ 0.2% @50/60Hz ≦ 0.3% @<500Hz ≦ 0.5% @500.1Hz~999.9Hz		
Output voltage response time*2	100 us (TYP)		
Efficiency*3	80 % or more		

*1. At an output voltage of 50 V to 200 V / 100 V to 400 V, a load power factor of 1, and in AC 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).
*3. For AC mode, at an output voltage of 100 V / 200 V, maximum current, and load power factor of 1.

Measured value display

Model			ASR-3200	ASR-3300	ASR-3400
Voltage	RMS, AVG value*1	Resolution	0.1 V		
		Accuracy*2	For 45 Hz to 65 Hz and DC: ±(0.5 % of reading + 0.5 V / 1 V) For all other frequencies: ±(0.7 % of reading + 1 V / 2 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:	For 45 Hz to 65 Hz and DC:	For 45 Hz to 65 Hz and DC:

			±(0.5 % of reading+0.1 A/0.05 A) For all other frequencies: ±(0.7 % of reading+0.2 A/0.1 A)	±(0.5 % of reading+0.15 A/0.08 A) For all other frequencies: ±(0.7 % of reading+0.3 A/0.15 A)	±(0.5 % of reading+0.2 A/0.1 A) For all other frequencies: ±(0.7 % of reading+0.4 A/0.2 A)
	PEAK value	Resolution	0.1 A		
		Accuracy*4	For 45 Hz to 65 Hz and DC: ±(|2 % of reading| + 0.5 A/0.25 A)	For 45 Hz to 65 Hz and DC: ±(|2 % of reading| + 0.8 A/0.4 A)	For 45 Hz to 65 Hz and DC: ±(|2 % of reading| + 1 A/0.5 A)
Power	Active (W)	Resolution	1 W		
		Accuracy*5	±(2 % of reading +2 W)	±(2 % of reading +3 W)	±(2 % of reading +4 W)
	Apparent (VA)	Resolution	1 VA		
		Accuracy*5*6	±(2 % of reading +2 VA)	±(2 % of reading +3 VA)	±(2 % of reading +4 VA)
	Reactive (VAR)	Resolution	1 VAR		
		Accuracy*5*7	±(2 % of reading +2 VAR)	±(2 % of reading +3 VAR)	±(2 % of reading +4 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		
Harmonic voltage Effective value (rms) Percent (%) (AC-INT and 50/60 Hz only)		Range	Up to 40th order of the fundamental wave		
		Full Scale	200 V / 400 V, 100%		
		Resolution	0.1 V, 0.1%		
		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 Effective value (rms) Percent (%)		Range	Up to 40th order of the fundamental wave		
		Full Scale	20 A / 10 A, 100%	30 A / 15 A, 100%	40 A / 20 A, 100%
		Resolution	0.01 A, 0.1%		
		Accuracy*3	Up to 20th ±(1 % of reading+0.4 A/0.2 A) 20th to 40th ±(1.5 % of reading+0.4 A/0.2 A)	Up to 20th ±(1 % of reading+0.6 A/0.3 A) 20th to 40th ±(1.5 % of reading+0.6 A/0.3 A)	Up to 20th ±(1 % of reading+0.8 A/0.4 A) 20th to 40th ±(1.5 % of reading+0.8 A/0.4 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 20 V to 200 V / 40 V to 400 V and 23 °C ± 5 °C. DC mode: For an output voltage of 28.5 V to 285 V / 57 V to 570 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 20 V to 200 V / 40 V to 400 V and 23 °C ± 5 °C.

Others

Model	ASR-3200	ASR-3300	ASR-3400
Protections	UVP, OCP, OTP, OPP, Fan Fail		

Display		TFT-LCD, 4.3 inch
Memory Function		Store and recall settings, Basic settings: 10 (0~9 numeric keys)
Arbitrary Wave	Number of memories	16 (nonvolatile)
	Waveform length	4096 words

General Specifications

Model			ASR-3200	ASR-3300	ASR-3400
Interface	Standard	USB	Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB-CDC, USB-TMC		
		LAN	MAC Address, DNS IP Address, User Password, Gateway IP Address, Instrument IP Address, Subnet Mask		
		RS-232C	Complies with the EIA-RS-232 specifications		
		EXT Control	External Signal Input External Control I/O		
		GPIB	SCPI-1993, IEEE 488.2 compliant interface		
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 EN 61326-2-1 EN 61000-3-2 EN 61000-3-3 EN 61000-3-11 EN 61000-3-12 EN 61000-4-2/-4-3/-4-4/-4-5/-4-6/-4-8/-4-11/-4-34 EN 55011 (Class A) EN 55032		
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 % to 80 % RH (no condensation)		
	Storage humidity range		90 % RH or less (no condensation)		
	Altitude		Up to 2000 m		
Transportation Integrity			ISTA 2A Test Procedure		
Dimensions (mm)			430(W)×176(H)×550(D) (not including protrusions)		
Weight			Approx. 25 kg	Approx. 25 kg	Approx. 25 kg
Accessories	Safety information		1 copy		
	CD-ROM		1 disc		
	Input/Output Cover		1 set		
	EIA Rack Mount		1 set		
	USB Cable		1 piece		

A value with the accuracy is the guaranteed value of the specification. However, an accuracy noted as reference value shows the supplemental data for reference when the product is used, and is not under the guarantee. A value without the accuracy is the nominal value or representative value (shown as typ.).