

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	ASR-3400HF
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	5000 VA or less
Power factor ^{*1}	200Vac	0.95 (TYP)			
Max. input current	200Vac	15 A	22.5 A	30 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	ASR-3400HF
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	40 A
	200 V	10 A	15 A	20 A	20 A
Maximum peak current ^{*4}	100 V	120 A	180 A	240 A	160 A
	200 V	60 A	90 A	120 A	80 A
Load power factor		0 to 1 (leading phase or lagging phase)			
Power capacity		2000 VA	3000 VA	4000 VA	4000 VA
Frequency	Setting range	AC Mode: 40.0 Hz to 999.9 Hz, AC+DC Mode: 1 Hz to 999.9 Hz			AC Mode: 40.0 Hz to 5000 Hz, AC+DC Mode: 1 Hz to 5000 Hz
	Setting resolution	0.01 Hz (1.00 to 99.99 Hz), 0.1 Hz (100.0 to 999.9 Hz)			0.01 Hz (1.00 to 99.99 Hz), 0.1 Hz (100.0 to 999.9 Hz) 1 Hz (1000 to 5000 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°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 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	ASR-3400HF
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	40 A
	200 V	10 A	15 A	20 A	20 A
Maximum peak current ^{*4}	100 V	120 A	180 A	240 A	160 A
	200 V	60 A	90 A	120 A	80 A
Power capacity		2000 W	3000 W	4000 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°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. Limited by the maximum current.

Output voltage stability

Model	ASR-3200	ASR-3300	ASR-3400	ASR-3400HF
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	ASR-3400HF
Total harmonic distortion(THD) ^{*1}	< 0.2% @50/60Hz < 0.3% @ <500Hz < 0.5% @500.1Hz~999.9Hz			< 0.2% @50/60Hz < 0.5% @ <500Hz < 1.0% @500.1Hz~2000Hz < 2.0% @2001Hz~5000Hz
Output voltage response time ^{*2}	100 μs (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	ASR-3400HF
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: ±(0.5 % of reading+0.1 A/0.05 A) For all other frequencies: ±(0.7 % of reading+0.2 A/0.1 A)	For 45 Hz to 65 Hz and DC: ±(0.5 % of reading+0.15 A/0.08 A) For all other frequencies: ±(0.7 % of reading+0.3 A/0.15 A)	For 45 Hz to 65 Hz and DC: ±(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 100th 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 100th ±(0.3 % of reading + 0.5 V / 1 V)		
Harmonic current Effective value (rms) Percent (%) (AC-INT and 50/60 Hz only)		Range	Up to 100th 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 100th ±(1.5 % of reading+0.4 A/0.2 A)	Up to 20th ±(1 % of reading+0.6 A/0.3 A) 20th to 100th ±(1.5 % of reading+0.6 A/0.3 A)	Up to 20th ±(1 % of reading+0.8 A/0.4 A) 20th to 100th ±(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	ASR-3400HF
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-3400HF	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		
		GPIO	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)×530(D) (not including protrusions)			
Weight		Approx. 25 kg			

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.).