ASR-6000 Series Parallel Models Specifications

SPECIFICATIONS

Model		ASR-6600-24		ASR-6600-30		ASR-6600-36	
Input Ratings							
Power type		Three phase Three wire Delta connection, Three phase Four wire Y connection					
Voltage range *1		200 to 240 Vac ± 10 % (Phase Voltage), 380 to 415 Vac ± 10 % (Line Voltage)					
Frequency range		47 Hz to 63 Hz					
Power factor *2		0.95 or higher (typ.)					
Efficiency *2		80 % or higher					
Maximum power consumption		32 kVA or lower		40 kVA or lower		48 kVA or lower	
AC Output							
Multi-phase output		Single-phase output	Polyphase output	Single-phase output	Polyphase output	Single-phase output	Polyphase output
Output capacity		24 kVA	1P3W: 16 kVA 3P4W: 24 kVA	30 kVA	1P3W: 20 kVA 3P4W: 30 kVA	36 kVA	1P3W: 24 kVA 3P4W: 36 kVA
Mode		1P2W	1P3W 3P4W (Y-connection)	1P2W	1P3W 3P4W (Y-connection)	1P2W	1P3W 3P4W (Y-connection)
Setting mode *3		---	Unbalance, Balanced	---	Unbalance, Balanced	---	Unbalance, Balanced
Phase voltage	Setting Range *4	0.00 V to 175.0 V / 0.0 V to 350.0 V (sine and square wave), Setting Resolution: 0.01 V / 0.1 V					
		0.00 Vpp to 500.0 Vpp / 0.00 Vpp to 1000 Vpp (triangle and arbitrary wave), Setting Resolution: 0.01 Vpp / 0.1 Vpp / 1 Vpp					
	Accuracy *5	±(0.3 % of set + 0.5 V / 1 V)					
Line voltage setting range *6		---	1P3W: 0.00 V to 350.0 V / 0.00 V to 700.0 V 3P4W: 0.00 V to 303.1 V / 0.00 V to 606.2 V (sine wave only) Setting Resolution: 0.01 V / 0.1 V	---	1P3W: 0.00 V to 350.0 V / 0.00 V to 700.0 V 3P4W: 0.00 V to 303.1 V / 0.00 V to 606.2 V (sine wave only) Setting Resolution: 0.01 V / 0.1 V	---	1P3W: 0.00 V to 350.0 V / 0.00 V to 700.0 V 3P4W: 0.00 V to 303.1 V / 0.00 V to 606.2 V (sine and square wave) Setting Resolution: 0.01 V / 0.1 V
Maximum current *7		240 A / 120 A	80 A / 40 A	300 A / 150 A	100 A / 50 A	360 A / 180 A	120 A / 60 A
Maximum peak current *8		Four times of the maximum RMS current					
Load power factor *9		0 to 1 (leading phase or lagging phase, 45 Hz to 65Hz)					
Frequency	Setting range	AC Mode: 15.00 Hz to 550.0 Hz, AC+DC Mode: 1.00 Hz to 550.0 Hz, Setting resolution: 0.01 Hz / 0.1 Hz					
	Accuracy	± 0.01 % of set					
	Stability *10	± 0.005 %					
Output on phase setting range *11		0.0° to 359.9° variable (Free / Fix selectable), 0.1° (1 Hz to 500 Hz), 1° (500 Hz to 550 Hz)					
Output off phase setting range *11		0.0° to 359.9° variable (Free / Fix selectable), 0.1° (1 Hz to 500 Hz), 1° (500 Hz to 550 Hz)					
Setting range of the phase angle *12		---	3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1°	---	3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1°	---	3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1°
Phase angle accuracy *13		---	45 Hz to 65 Hz: ±1.0° 15 Hz to 550 Hz: ±2.0°	---	45 Hz to 65 Hz: ±1.0° 15 Hz to 550 Hz: ±2.0°	---	45 Hz to 65 Hz: ±1.0° 15 Hz to 550 Hz: ±2.0°
DC offset *14		± 20 mV (typ.)					
DC Output (only single phase output)							
Output capacity		24 kW		30 kW		36 kW	
Mode		Floating output, the N terminal can be grounded					
Voltage	Setting Range	-250.0 V to +250.0 V / -500.0 V to +500.0 V, Setting Resolution: 0.01 V / 0.1 V					
	Accuracy *15	±(|0.3 % of set| + 0.3 V / 0.6 V)					
Maximum current *16		240 A / 120 A		300 A / 150 A		360 A / 180 A	
Maximum peak current *17		Four times of the maximum current					
Output Stability, Total Harmonic Distortion, Output Voltage Rising Time and Ripple Noise							
Line regulation		±0.1 % or less (Phase voltage)					
Load regulation *18		±1 V (phase voltage, 0 % to 100 %, via output terminal)					
Distortion of Output *19		<0.3 % @1 Hz to 100 Hz, <0.5 % @100.1 Hz to 550 Hz					
Output voltage response time *20		Slow: 300 µs (typ.)					
Ripple noise *21		0.5 Vrms / 1 Vrms (TYP)					

*1 Y connection is three-phase, five-wire, Delta connection is three-phase, four-wire. (Accessories will be provided)
*2. In the case of AC-INT mode, the rate output voltage, resistance load at maximum output current, 45 Hz to 65 Hz and sine wave output only.
*3. Can be only set in 3P4W mode.
*4. For phase voltage setting in polyphase output. In balance mode all phase are collectively set and in unbalance mode each phases are individually set.
*5. For an output voltage of 10 V to 175 V / 20 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. For phase voltage setting in the polyphase output.
*6. Line voltage only can be set in balance mode.
*7. If the output voltage is higher than rated value, this is limited to satisfy the power capacity. If there is the DC superimmposition, the active current of AC+DC satisfies the maximum current. In the case of 40 Hz or lower or 400 Hz or higher, and that the ambient temperature is 40 degree or higher, the maximum current may decrease.
*8. With respect to the capacitor-input rectifying load. Limited by the maximum current.
*9. External power injection or regeneration which is over short reverse power flow capacity is not available.
*10. For 45 Hz to 65 Hz, the rated output voltage, no load and the resistance load for the maximum current, and the operating temperature range.
*11. L1, L2 and L3 phase can be set independ at independ mode in the polyphase output.
*12. Can be set only with independ mode in polyphase output.
*13. For an output voltage of 50 V or higher, sine wave, same load and voltage condition for all phase.
*14. In the case of the AC mode and output voltage setting to 0 V, 23 °C ± 5 °C
*15. For an output voltage of -250 V to -10 V, +10 V to +250 V / -500 V to -20 V, +20 V to +500 V, no load, AC voltage set to 0 V (AC+DC mode) and 23 °C ± 5 °C
*16. If the output voltage is higher than rated value, this is limited to satisfy the power capacity. If there is the AC superimmposition, the active current of AC+DC satisfies the maximum current. And the ambient temperature is 40 degree or higher, the maximum current may decrease.
*17. Instantaneous eithin 3 ms, limited by the maximum current at rated output voltage.
*18. For an output voltage of 75 V to 175 V / 150 V to 350 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.
*19. 50 % or higher of the rated output voltage, the maximum current or lower, AC and AC+DC modes, THD+N. For the polyphase output, it is a specification for phase voltage setting.
*20. 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 % to 90 % of output voltage.
*21. For 5 Hz to 1 MHz components in DC mode using the output terminal on the rear panel.

Measured Value Display (All accuracy of the measurement function is indicated for 23 °C±5 °C.)

			Single-phase output	Polyphase output *6
Voltage *1*2	Resolution		0.01 V / 0.1 V	
	RMS value accuracy		45 Hz to 65 Hz and DC: ± (0.5 % of rdg + 0.5 V / 1 V) 15 Hz to 550 Hz: ± (0.7 % of rdg + 1 V / 2 V)	
	AVG value accuracy		DC: ± (|0.5 % of rdg| + 0.5 V / 1 V)	
	PEAK value accuracy *3		45 Hz to 65 Hz and DC: ±(|2 % of rdg| + 1 V / 2 V)	
Current *4	Resolution		0.01 A / 0.1 A	
	RMS value accuracy		45 Hz to 65 Hz: ±(0.5 % of rdg + 0.3 A / 0.15 A) 15 Hz to 550 Hz: ±(0.7 % of rdg + 0.6 A / 0.4 A)	45 Hz to 65 Hz: ±(0.5 % of rdg + 0.15 A / 0.08 A) 15 Hz to 550 Hz: ±(0.7 % of rdg + 0.3 A / 0.15 A)
	AVG value accuracy		DC: ± (|0.5 % of rdg| + 0.6 A / 0.4 A)	DC: ± (|0.5 % of rdg| + 0.3 A / 0.15 A)
	PEAK value accuracy *5		45 Hz to 65 Hz and DC: ±(|2 % of rdg| + 3 A / 1.5 A)	45 Hz to 65 Hz and DC: ±(|2 % of rdg| + 1.5 A / 0.75 A)
Power *7*8	Active (W)	Resolution	0.1 W / 1 W / 10 W	
		Accuracy *9	45 Hz to 65 Hz and DC: ±(2 % of rdg + 9 W)	45 Hz to 65 Hz and DC: ±(2 % of rdg + 3 W)
	Apparent (VA)	Resolution	0.1 VA / 1 VA / 10VA	
		Accuracy	45 Hz to 65 Hz: ±(2 % of rdg + 18 VA)	45 Hz to 65 Hz: ±(2 % of rdg + 6 VA)
	Reactive (VAR)	Resolution	0.1 VAR / 1 VAR / 10VAR	
		Accuracy *10	45 Hz to 65 Hz: ±(2 % of rdg + 18 VAR)	45 Hz to 65 Hz: ±(2 % of rdg + 6 VAR)
Power factor		Range	0.000 to 1.000	
		Resolution	0.001	
Harmonic voltage Effective value (rms) Percent (%) (AC-INT and 50/60 Hz only) *11		Range	Up to 100th order of the fundamental wave	
		Full Scale	200 V / 400 V, 100 %	
		Resolution	0.01 V /0.1 V, 0.1%	
		Accuracy *12	Up to 20th: ±(0.2 % of rdg + 0.5 V / 1 V) 21th to 100th: ±(0.3 % of rdg + 0.5 V / 1 V)	
Harmonic current Effective value (rms) Percent (%) (AC-INT and 50/60 Hz only) *11		Range	Up to 100th order of the fundamental wave	
		Full Scale	252 A / 126 A, 100 % (ASR-6600-24), 315 A / 157.5 A, 100 % (ASR-6600-30), 378 A / 189 A, 100 % (ASR-6600-36)	84 A / 42 A, 100 % (ASR-6600-24), 105A / 52.5 A, 100 % (ASR-6600-30), 126 A / 63 A, 100 % (ASR-6600-36)
		Resolution	0.01 A / 0.1 A / 1 A, 0.1%	
		Accuracy *13	Up to 20th: ±(1 % of rdg + 3 A / 1.5 A) 21th to 100th: ±(1.5 % of rdg + 3 A / 1.5 A)	Up to 20th: ±(1 % of rdg + 1 A / 0.5 A) 21th to 100th: ±(1.5 % of rdg + 1 A / 0.5 A)

*1. In the polyphase output, the specification is for phase voltage, and the DC average value display cannot be selected.
*2. Accuracy values are in the case that the output voltage is within voltage setting range.
*3. The accuracy is for output waveform DC or sine wave only.
*4. Accuracy values are in the case that the output current is 5 % to 100 % of the maximum current.
*5. The accuracy is for output waveform DC or sine wave only.
*6. In the polyphase output, these are the specifications for each phase.
*7. For an output voltage of 50 V or greater, an output current in the range of 10 % to 100 % of the maximum current.
*8. The apparent and reactive powers are not displayed in the DC mode.
*9. For the load with the power factor 0.5 or higher.
*10. For the load with the power factor 0.5 or lower.
*11. The measurement does not conform to the IEC or other standard. Phase Voltage and Phase Current.
*12. For an output voltage of 10 V to 175 V / 20 V to 350 V.
*13. An output current in the range of 5 % to 100 % of the maximum current.

Others					
Protections			UVP, OVP, OCP, OTP, OPP, Fan Fail, Peak and RMS Current Limit		
Display			TFT-LCD, 7 inch		
Memory function			Store and recall settings, Basic settings: 10		
Arbitrary wave	**Number of memories**		253 (nonvolatile)		
	Waveform length		4096 words		
	Amplitude resolution		16 bits		
General Specifications					
Interface	**Standard**	**USB**	Type A: Host, Type B: Slave, Speed: 2.0, USB-CDC / USB-TMC		
		LAN	MAC Address, DNS IP Address, User Password, Gateway IP Address, Instrument IP Address, Subnet Mask		
		External	External Signal Input External Control I/O V/I Monitor Output		
		RS-232C	Complies with the EIA-RS-232 specifications		
	Optional 1	**GPIB**	SCPI-1993, IEEE 488.2 compliant interface		
	Optional 2	**CAN Bus**	Complies with CAN 2.0A or 2.0B based protocol		
	Optional 3	**Device Net**	Complies with CAN 2.0A or 2.0B based protocol		
Insulation resistance	**Between input and chassis, output and chassis, input and output**		DC 500 V, 30 MΩ or more		
Withstand voltage	**Between input and chassis, output and chassis, input and output**		AC 1500 V or DC 2130 V , 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 (mm) (not including protrusions)			598(W)×1294(H)×906(D)	598(W)×1472(H)×906(D)	598(W)×1650(H)×906(D)
Weight			Approx. 250 kg	Approx. 305 kg	Approx. 370 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.).
Product specifications are subject to change without notice.