ASR-3000 Series

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4000

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Programmable AC/DC Power Source

FEATURES

- Output Rating: AC 0 ~ 400 Vrms, DC 0 ~ \pm 570 V
- Output Frequency up to 999.9Hz (5kHz for ASR-3400HF only)
- DC Output (100% of Rated Power)
- Measurement Items: Vrms, Vavg, Vpeak, Irms, IpkH, Iavg, Ipeak, P, S, Q, PF, CF
- Voltage and Current Harmonic Analysis(THDv, THDi)
- Remote Sensing Capability
- OCP, OPP, OTP, AC Fail Detection and Fan Fail Alarm
- Support Arbitrary Waveform Function
- Output Capacity: 2kVA/3kVA/4kVA
- Customized Phase Angle for Output On/Off
- Sequence and Simulation Function(up to 10 sets)
- Interface(std): USB, LAN, RS-232, GPIB
- Built-in External Control I/O and External Signal Input
- Built-in Output Relay Control
- Memory Function (up to 10 sets)
- Built-in Web Server



The ASR-3000 Series is an AC+DC power source, featuring high-speed DC voltage rising and falling time (\leq 100us). There are four models of the series: ASR-3200(2kVA), ASR-3300(3kVA) and ASR-3400/3400HF (4kVA). The series can provide rated power output during AC output and DC output. Ten ASR-3000 Series 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 superimposition mode (AC-DC ADD Mode), 7) External AC/DC signal superimposition mode (AC+DC-ADD Mode), 8) External AC signal synchronization mode (AC-SYNC Mode)10) External DC voltage control of AC output mode(AC-VCA).

ASR-3000 Series is ideal for the development of On-board Chargers, Server Powers, LED modules, AC Motors, AC Fans, UPS and various electronic components, as well as for testing applications of automotive electrical equipment and home appliances.

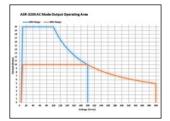
The ASR-3000 Series provides users with waveform output capabilities including 1) Sequence mode generates waveform fallings, surges, sags, changes and other abnormal power line conditions; 2) Arbitrary waveform function allows users to store/upload userdefined waveforms; and 3) Simulate mode simulates power outage, voltage rise, voltage fall, and frequency variations. When the ASR-3000 Series power source outputs, it can also measure Vrms, Vavg, Vpeak, Irms, Iavg, Ipeak, IpkH, P, S, Q, PF, CF, 100th-order Voltage Harmonic and Current Harmonic. In addition, the remote sensing function ensures accurate voltage output, and the Customized Phase Angle for Output On/Off function can set the start and end angles of the voltage output according to the test requirements. The protection limits of V-Limit, Ipeak-Limit and F-Limit can be set according to user requirements. Over voltage limit, OCP, OPP will protect the DUT during the output process. The Fan Fail Alarm function and the AC fail alarm function are also designed in the ASR-3000 Series.

The front panel of the ASR-3000 Series provides a universal socket or a European socket, which allows users to plug and use so as to save wiring time. Since the power socket specification has a maximum current of 15A, the rear panel of ASR-3000 Series is designed with a current circuit breaker. When the socket current is greater than 15A, it will automatically open the circuit to protect users. The ASR-3000 Series supports I/O interface and is standardly equipped with USB, LAN, External I/O, RS-232C and GPIB.

PANEL INTRODUCTION

CE RS-232 USB LAN Ext I/O GP
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. GPIB Connector
14. Remote Sensing Input Terminal 15. Output Terminal 16. Line Input 17. External Signal Input/External Synchronized Signal Input
18. RS-232C Connector 19. LAN Connector 20. USB Interface Connector(B Type) 21. Circuit Breaker

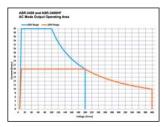
OPERATING AREA FOR ASR-3000 SERIES



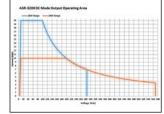
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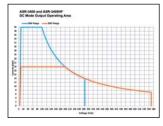
AC Output for ASR-3200



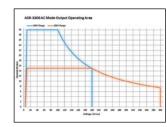
AC Output for ASR-3400/3400HF

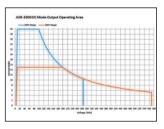


DC Output for ASR-3200



DC Output for ASR-3400/3400HF





AC Output for ASR-3300

DC Output for ASR-3300

Model Name	Power Rating	Max. Output Current	Max. Output Voltage
ASR-3200	2k VA	20 / 10 A	400 Vrms / ±570 Vdc
ASR-3300	3k VA	30 / 15 A	400 Vrms / ±570 Vdc
ASR-3400	4k VA	40 / 20 A	400 Vrms / ±570 Vdc
ASR-3400HF	4k VA	40 / 20 A	400 Vrms / ±570 Vdc

The ASR-3000 series is an AC + DC power source that provides not only rated power output for AC output, but also rated power output for DC output.



MEASUREMENT ITEMS FOR ASR-3000 SERIES

 ON
 0.9% AUTOSIN
 Image: Constraint of the second se

AVG Meas Display

+0.19

0.00

0.00

Vmax	+495.7	Vpk		0.0	w	[Simple] Harm
Vmin	-494.2	Vpk		2.9	VA	RMS
lmax	+0.03	Apk		+2.9	var	[PEAK]
lmin	-0.03	Apk	PF	0.000		
lpkH	+0.19	Apk	CF	0.00		[RUN]

Peak Meas Display

ON	ON	ON	ON 949	6 200V SQU		1
Harr	Harn	Harn	Harmoni	c Current Measure	THDi = 42.2 %	Simple
31th	21th	11th	1st	4.31 Arms	90.7 %	[Harm]
32th	22th	12th	2nd	0.00 Arms	0.0 %	
33th	23th	13th	3rd	1.44 Arms	30.2 %	THDV
34th	24th	14th	4th	0.00 Arms	0.0 %	[THDi]
35th	25th	15th	Sth	0.86 Arms	18.0 %	
36th	26th	16th	6th	0.00 Arms	0.0 %	
37th	27th	17th	7th	0.61 Arms	12.8 %	
38th	28th	18th	8th	0.00 Arms	0.0 %	
39th	29th	19th	9th	0.47 Arms	9.9%	Page
40th	30th	20th	10th	0.00 Arms	0.0 %	Down

Current Harmonic

parameters including Vrms/Irms, Vavg/Iavg and Vmax/Vmin/ Imax/ Imin can be switched by users at any time to display the instantaneous calculation reading.

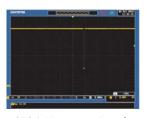
RMS Meas Display

Harr	Harn	Harn	Harmon	ic Voltage Measure	THD _V =	42.2 %	Simple
31th	21th	11th	1st	179.9 Vrms		90.7 %	[Harm]
32th	22th	12th	2nd	0.0 Vrms		0.0 %	
33th	23th	13th	3rd	59.8 Vrms		30.2 %	[THDv]
34th	24th	14th	4th	0.0 Vrms		0.0 %	THDI
35th	25th	15th	Sth	35.8 Vrms		18.0 %	
36th	26th	16th	6th	0.0 Vrm s		0.0 %	
37th	27th	17th	7th	25.5 Vrms		12.9 %	
38th	28th	18th	8th	0.0 Vrms		0.0%	
39th	29th	19th	9th	19.8 Vrms		10.0 %	Page
40th	30th	20th	10th	0.0 Vrms		0.0 %	Down

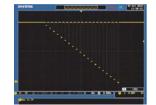
Voltage Harmonic

The ASR-3000 Series provides users with measurement capabilities including Vrms, Vavg, Vpeak, Irms, Iavg, Ipeak, IpkH, P, S, Q, PF, CF, 100th-order Voltage Harmonic and Current Harmonic. During the power output, the measurement

SEQUENCE MODE AND BUILT-IN ISO-16750-2 WAVEFORMS

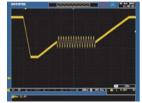


SEQ6: Momentary Drop in Supply Voltage

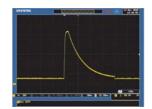


SEQ7: Reset Behavior at Voltage Drop with 12V System

The sequence mode provides editable 10 sets of SEQ0~SEQ9, each set has 0~999 steps, each step time setting range is 0.0001~999.9999 seconds. Users can combine multiple sets of steps to generate the required waveforms, including waveform falling, surges, sags and other abnormal power line conditions to meet the needs of the test applications.



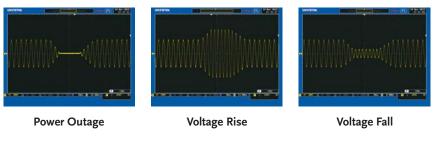
SEQ8: Starting Profile Waveform



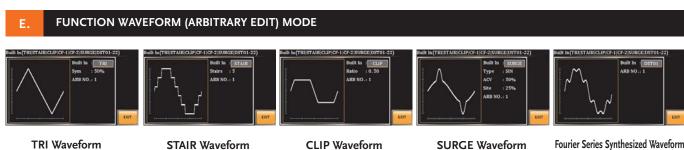
SEQ9: Load Dump with Tr_10ms, Td_40ms

In addition, ASR-3000 Series also built in common ISO-16750-2 test waveforms in the Sequence Mode preset waveforms, including Momentary Drop in Supply Voltage built in at SEQ6, Reset Behavior at Voltage Drop with 12V system built in at SEQ7, Starting Profile Waveform built in at SEQ8 and Load Dump with Tr_10ms, and Td_40ms built in at SEQ9.

SIMULATE MODE D



Simulate Mode can quickly simulate different transient waveforms, such as power outage, voltage rise, voltage fall, etc., for engineers to evaluate the impact of transient phenomena on the DUT. Ex: Capacitance durability test.



ASR-3000 Series provides more than 20,000 waveform combinations then the waveform is loaded into the ARB 1~16 waveform register in seven categories, allowing users to quickly simulate different AC voltage waveforms. Adjust the desired waveform type directly through the panel (displayed synchronously on the screen),

through the access procedures, and return to the main menu output mode to perform ARB Waveform output.

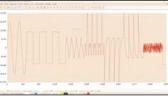
PC SOFTWARE



Basic Controller



Sequence Mode



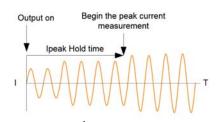


ARB Waveform Edit

The Waveform is Observed with DSO

The ASR-3000 Series software includes basic settings, the Simulate Mode, the Sequence Mode, Data Log and the arbitrary waveform editing function. Users can directly set output voltage, frequency, start/stop phase on ASR-3000 Series through the software. The Simulate Mode can quickly simulate different transient waveforms such as power outage, voltage rise, voltage fall... etc.

T, IPK HOLD & IPK, HOLD FUNCTIONS

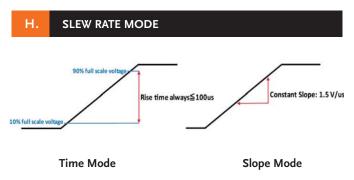


T, Ipk Measurement

T, Ipk Hold is used to set the delay time after the output (1ms \sim 60,000ms) to capture the Ipeak value and keep the maximum value. The update only functions when the measurement value is greater than the original value. The T, Ipk Hold delay time setting can be used to measure surge current at the power on process of the DUT.

Ipk Hold can be used to measure the transient surge current of the DUT at power on without using an oscilloscope and a current probe.

The Sequence Mode can edit the editing parameters read back from ASR-3000 Series, or directly edit the parameters and control ASR-3000 Series to output waveforms according to the set sequence. The arbitrary waveform editing function not only combines various waveforms, including sine waves, square waves, triangle waves, and noise waveforms, but also allows uses to draw arbitrary waveforms and output them.



The ASR-3000 Series can set the Slew Rate Mode to determine the rise time of the voltage according to the test requirements of the DUT. Slew Rate Mode provides "Time" and "Slope" modes. When setting "Time" mode, ASR-3000 Series can increase output to 10~90% of the set voltage within 100 $\mu s;$ and when selecting "Slope" mode, ASR-3000 Series increases output voltage by a fixed rising slope of 1.5V/µs until reaching the set voltage value.

In addition, if users decide to self-define the rise time of the output voltage, users can flexibly set the rise time of the ASR-3000 Series voltage by editing the Sequence mode.

			ACD 2200	ACD 2200	ACD 2400	ACD 2400LIE
INPUT RATING (AC)			ASR-3200	ASR-3300	ASR-3400	ASR-3400HF
NOMINAL INPUT VC			200 Vac to 240 Vac			
INPUT VOLTAGE RA PHASE	NGE		180 Vac to 264 Vac Single phase, Two-wire			
NOMINAL INPUT FREQUENCY		50 Hz to 60 Hz				
INPUT FREQUENCY			47 Hz to 63 Hz			
MAX. POWER CONSU	UMPTION	200Vac	2500 VA or less 0.95 (TYP)	3750 VA or less	5000 VA or less	5000 VA or less
POWER FACTOR *1 MAX. INPUT CURREN	NT	200Vac	15 A	22.5 A	30 A	30 A
*1. For an output voltage of 10	00 V / 200 V (100V / 200V range), maximum current, and a load po				
AC MODE OUTPUT R	RATINGS (AC rms)					
VOLTAGE		Setting Range " Setting Resolution	0.0 V to 200.0 V / 0.0 V to 400.0 V 0.1 V			
		Accuracy ^{*2}	±(1 % of set + 1 V / 2 V)			
OUTPUT PHASE			Single phase, Two-wire			
MAXIMUM CURRENT	т*3	100 V	20 A	30 A	40 A	40 A
MAXIMUM PEAK CU	PPENT *4	200 V 100 V	10 A 120 A	15 A 180 A	20 A 240 A	20 A 160 A
		200 V	60 A	90 A	120 A	80 A
LOAD POWER FACTO	OR		0 to 1 (leading phase or lagging phase			
POWER CAPACITY FREQUENCY		Setting Range	2000 VA AC Mode: 40.0 Hz to 999.9 Hz,	3000 VA	4000 VA	4000 VA AC Mode: 40.0 Hz to 5000 Hz
Theorem		octaing range	AC+DC Mode: 1 Hz to 999.9 Hz			AC+DC Mode: 1 Hz to 5000 Hz
		Setting Resolution	0.01 Hz (1.00 to 99.99 Hz),			0.01 Hz (1.00 to 99.99 Hz),
			0.1 Hz (100.0 to 999.9 Hz)			0.1 Hz (100.0 to 999.9 Hz)
		Accuracy	0.02% of set (23 °C ± 5 °C)			1 Hz (1000 to 5000 Hz)
		Stability *5	± 0.005%			
OUTPUT ON PHASE			0° to 359° variable (setting resolutio	n 1°)		
*1, 100 V / 200 V range.			Within ± 20 mV (TYP)			
 *3. For an output voltage of 1 If there is the DC superimp *4. With respect to the capacit *5. For 45 Hz to 65 Hz, the rat 	V to 100 V / 2 V to 200 V. Limit position, the current of AC+DC m tor-input rectifying load. Limited ted output voltage, no load and	ode satisfies the maximum curren by the maximum current.	:, no load, and 23 $^{\circ}C \pm 5^{\circ}C$. output voltage is 100 V to 200 V / 200 V to 400 V. t. In the case of lower than 40 Hz, and the power rating m current, and the operating temperature.	temperature, the maximum current will be decrease.		
*6. In the case of the AC mode OUTPUT RATING FO						
VOLTAGE		Setting Range *1	-285 V to +285 V / -570 V to +570 V			
		Setting Resolution	0.1 V			
	_ 11	Accuracy *2	±(1 % of set + 1 V / 2 V)	20.4	10.1	10.4
MAXIMUM CURRENT	T	100 V 200 V	20 A 10 A	30 A 15 A	40 A 20 A	40 A 20 A
MAXIMUM PEAK CU	RRENT *4	100 V	120 A	180 A	240 A	160 A
		200 V	60 A	90 A	120 A	80 A
					4000 W	4000 W
 *1. 100 V / 200 V range. *2. For an output voltage of -2: *3. For an output voltage of 1. *4. Limited by the maximum c 	.4 V to 100 V / 2.8 V to 200 V. Li current.	V / -570 V to -57 V, +57 V to +570 mited by the power capacity when	2000 W V, no load, and 23 °C ± 5°C. the output voltage is 100 V to 250 V / 200 V to 500 V.	3000 W	4000 W	
*3. For an output voltage of 1. *4. Limited by the maximum c OUTPUT VOLTAGE S LINE REGULATION LOAD REGULATION RIPPLE NOISE *3	.4 V to 100 V / 2.8 V to 200 V. Li surrent. TTABILITY P1 ◆2	mited by the power capacity when	V, no load, and 23 °C ± 5°C. the output voltage is 100 V to 250 V / 200 V to 500 V.		4000 W	· ·····
*1. 100 V / 200 V range. *2. For an output voltage of -2. *3. For an output voltage of -1. *4. Limited by the maximum c OUTPUT VOLTAGE S LINE REGULATION * LOAD REGULATION * INPPLE NOISE * *1. Power source input voltage * *2. For an output voltage 10	4.4 V to 100 V / 2.8 V to 200 V. Li current. STABILITY 1 2 e is 200 V, 220 V, or 240 V, no lo 00 V to 200 V / 200 V to 400 V, a	mited by the power capacity when ad, rated output. load power factor of 1, stepwise cl	V, no load, and 23 °C ± 5°C. the output voltage is 100 V to 250 V / 200 V to 500 V. 0.2% or less 0.5% or less (0 to 100%, via output 1 Vrms / 2 Vrms (TYP)			
 100 V / 200 V range. 12. For an output voltage of 1-2 13. For an output voltage of 1-4 14. Limited by the maximum or OUTPUT VOLTAGE BS LINE REGULATION ILINE REGULATION ILINE REGULATION REGULATION RIPPLE NOISE ^{BS} 14. Power source input voltage of 12 24. For an output voltage of 12 24. For an output voltage of 12 25. For S Hz to 1 MHz compo 	4.4 V to 100 V / 2.8 V to 200 V. Li current. STABILITY 1 1 1 1 1 1 1 1	mited by the power capacity when ad, rated output. load power factor of 1, stepwise cl put terminal on the rear panel.	V. no load, and 23 °C ± 5°C. the output voltage is 100 V to 250 V / 200 V to 500 V. 0.2% or less 0.5% or less (0 to 100%, via output 1 Vrms / 2 Vrms (TYP) nange from an output current of 0 A to maximum current	terminal)		· ·····
 11.00 V / 200 V range. 12. For an output voltage of 1-2 13. For an output voltage of 1-4 14. Limited by the maximum or OUTPUT VOLTAGE B LINE REGULATION ILINE REGULATION ILINE REGULATION RUPLE NOISE ⁶¹ 14. Power source input voltage of 11 14. For S Hz to 1 MHz compo 	4 V to 100 V / 2.8 V to 200 V. Li current. STABLITY 4 5 6 6 is 200 V, 220 V, or 240 V, no lo 00 V to 200 V / 202 V, or 240 V, no lo 00 V to 200 V / 200 V or 00 V. a ments in DC mode using the out WAVEFORM DISTORTI	mited by the power capacity when ad, rated output. load power factor of 1, stepwise cl put terminal on the rear panel.	V, no load, and 23 °C ± 5°C. the output voltage is 100 V to 250 V / 200 V to 500 V. 0.2% or less 0.5% or less (0 to 100%, via output 1 Vrms / 2 Vrms (TYP)	terminal)		< 0.2% @50/60Hz < 0.5% @<500Hz < 1.0% @500.1Hz~2000Hz
1.100 V / 200 V range. 12. For an output voltage of 1-2 15. For an output voltage of 1-2 15. For an output voltage of 1-4 4. Limited by the maximum c 100000000000000000000000000000000	4 Vo 100 V / 2.8 Vo 200 V. Li current. STABLITY 4 4 2 e is 200 V, 220 V, or 240 V, no lo 00 V to 200 V / 200 V and V. a pents in DC mode using the our XAVEFORM DISTORTION DISTORTION(THD)	mited by the power capacity when ad, rated output. load power factor of 1, stepwise cl put terminal on the rear panel.	V. no load, and 23 °C ± 5°C. the output voltage is 100 V to 250 V / 200 V to 500 V. 0.2% or less 0.5% or less (0 to 100%, via output 1 Vrms / 2 Vrms (TYP) hange from an output current of 0 A to maximum current EITAGE RESPONSE TIME, EFFICIENCY < 0.2% @50/60Hz < 0.3% @<500Hz < 0.5% @500.1Hz~999.9Hz 100 µs (TYP)	terminal)		< 0.2% @50/60Hz < 0.5% @<500Hz
P1: 100 V / 200 V range. P2: For an output voltage of 1-2 P3: For an output voltage of 1-2 P3: For an output voltage of 1-4 P4: Limited by the maximum of UITPUT VOLTAGE S UITPUT VOLTAGE N T0 VOLTAGE N T0 VOLTAGE N OUTPUT VOLTAGE N OUTPUT VOLTAGE N OUTPUT VOLTAGE S EFFICIENCY P3 P4: At an output voltage of 50	4 V to 100 V / 2.8 V to 200 V. Li current. STABLITY 4 4 2 2 4 2 2 4 4 4 2 4 4 4 4 4 4 4 4 4 4 4 4 4	mitted by the power capacity when ad, rated output. Ioad pourf factor of 1, stepwise cl put terminal on the rear panel. ON RATIO; OUTPUT VO	V, no load, and 23 °C ± 5°C. the output voltage is 100 V to 250 V / 200 V to 500 V. 0.2% or less 0.5% or less (0 to 100%, via output 1 Vrms / 2 Vrms (TYP) range from an output current of 0 A to maximum current LTAGE RESPONSE TIME, EFFICIENCY < 0.2% @50/60Hz < 0.3% @-500Hz < 0.3% @-500Hz < 0.5% @500.1Hz–999.9Hz 100 µs (TYP) 80 % or more de.	terminal) t (or its reverse), using the output terminal on the rear p		< 0.2% @50/60Hz < 0.5% @<500Hz < 1.0% @500.Hz~2000Hz
P1. 100 V / 200 V range. P2. For an output voltage of 1-2 P3. For an output voltage of 1-2 P3. For an output voltage of 1-4 Einteide by the maximum c OUTPUT VOLTAGE S LINE REGULATION P1. Power source input voltage of 10 P3. For an output voltage of 10 P3. For S H2 to 1 MH2 compo OUTPUT VOLTAGE W TOTAL HARMONIC D OUTPUT VOLTAGE R EFFICIENCY *3 P1. An output voltage of 50 *1. For an output voltage of 50 *1. For an output voltage of 50	4.4 Vo. 100 V / 2.8 V to 200 V. Li STABILITY *1 *2 *2 *1 *2 *1 *2 *2 *1 *2 *1 *2 *2 *3 *4 *4 *4 *4 *4 *5 *4 *5 *4 *5	mitted by the power capacity when ad, rated output. Ioad power factor of 1, stepwise cl put terminal on the rear panel. ON RATIO, OUTPUT VO	V. no load, and 23 °C ± 5°C. the output voltage is 100 V to 250 V / 200 V to 500 V. 0.2% or less 0.5% or less (0 to 100%, via output 1 Vrms / 2 Vrms (TYP) hange from an output current of 0 A to maximum current LTAGE RESPONSE TIME, EFFICIENCY < 0.2% @50/60Hz < 0.2% @5000Hz < 0.3% @<5000Hz < 0.5% @5000.1Hz–999.9Hz 100 µs (TYP) 80 % or more de. ge from an output current of 0 A to the maximum current	terminal) t (or its reverse), using the output terminal on the rear p		< 0.2% @50/60Hz < 0.5% @<500Hz < 1.0% @500.Hz~2000Hz
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*1.100 V / 200 V range. *2. For an output voltage of 1.2. Si For an output voltage of 1.4. Si For an output voltage of 1.4. CUTPUT VOLTAGE S LINE REGULATION IDAD RECULATION RIPPLE NOISE *1. HOWE SOURCE INDUV VOLTAGE VIEL OUTPUT VOLTAGE N OUTPUT VOLTAGE N OUTPUT VOLTAGE N TOTAL HARMONIC D OUTPUT VOLTAGE S *1. At an output voltage of 10.1. *2. For an output voltage of 50.1. *3. For K make an output voltage of 50.1. *3. For K make an output voltage of 50.1. *3. For K make an output voltage of 50.1. *2. For an output voltage of 50.1. *3. For K make an output voltage of 50.1. *3. For K make an output voltage of 50.1. *2. For an output voltage of 50.1. *3. For K make an output voltage of 50.1. *3. For K make an output voltage of 50.1. *2. For an output voltage of 50.1. *3. For K make an output voltage of 50.1. *4. For S make an output voltage of 50.1. *4. For S make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1	4.4 Vio 100 V / 2.8 Vio 200 V. Li STABILITY *1 *2 *2 *1 *2 *2 *3 *4 Vio 100 Vio 200 Vio 7240 Vio no lo 000 Vio 200 Vio 200 Vio 400 Vio 3 *4 Vio 100 Vio 400	ad, rated output. load power factor of 1, stepwise cl put terminal on the rara panel. ON RATIO, OUTPUT VO ad power factor of 1, and in AC mc of 1, with respect to stepwise cl anum current, and load power facto resolution Accuracy Resolution Accuracy Resolution Accuracy Resolution Accuracy	V, no load, and 23 °C ± 5°C. the output voltage is 100 V to 250 V / 200 V to 500 V. 0.2% or less 0.5% or less (0 to 100%, via output 1 Vrms / 2 Vrms (TYP) mange from an output current of 0 A to maximum current LTACE RESPONSE TIME, EFFICIENCY < 0.2% @ 50/60Hz < 0.3% @ -500Hz < 0.3% @ -500Hz < 0.3% @ 500.1Hz–999.9Hz 100 µs (TYP) 80 % or more de. rge from an output current of 0 A to the maximum currer of 1. 0.1 V For 45 Hz to 65 Hz and DC: ±(0.5 % For all other frequencies: ± (0.7 % of 0.1 V For 45 Hz to 65 Hz and DC: ±(12 % 0.01 A For 45 Hz to 65 Hz and DC: ±(12 % 0.01 A For 45 Hz to 65 Hz and DC: ±(0.7 % of 0.1 A For 45 Hz to 65 Hz and DC: ±(0.7 % of 0.1 A For 45 Hz to 65 Hz and DC: ±(12 % 0.01 A For 45 Hz to 65 Hz and DC: ±(0.7 % of reading+0.1 A/0.05 A) For 45 Hz to 65 Hz and DC: ±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: ±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: ±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: ±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: ±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: ±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: ±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: ±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: ±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: ±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: ±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: ±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: ±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: ±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: ±(0.5 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: ±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: ±(0.7 % of reading+0.2 A/0.2 S A) (0.1 A)	terminal) t (or its reverse), using the output terminal on the rear p t (or its reverse), using the output terminal on the rear p t (or its reverse). 5 of reading + 0.5 V / 1 V) reading + 1 V / 2 V) of reading + 1 V / 2 V) For at5 Hz to 65 Hz and DC: $\pm (0.5 \% \text{ of reading}+0.15 \text{ A}/0.08 \text{ A})$ For all other frequencies: $\pm (0.7 \% \text{ of reading}+0.3 \text{ A}/0.15 \text{ A})$ For 45 Hz to 65 Hz and DC:	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) For 45 Hz to 65 Hz and DC:	< 0.2% @50/60Hz < 0.5% @<500Hz < 1.0% @500.1Hz~2000Hz < 2.0% @2100Hz~5000Hz
*1.100 V / 200 V range. *2. For an output voltage of 1.2. Si For an output voltage of 1.4. Si For an output voltage of 1.4. CUTPUT VOLTAGE S LINE REGULATION IDAD RECULATION RIPPLE NOISE *1. HOWE SOURCE INDUV VOLTAGE VIEL OUTPUT VOLTAGE N OUTPUT VOLTAGE N OUTPUT VOLTAGE N TOTAL HARMONIC D OUTPUT VOLTAGE S *1. At an output voltage of 10.1. *2. For an output voltage of 50.1. *3. For K make an output voltage of 50.1. *3. For K make an output voltage of 50.1. *3. For K make an output voltage of 50.1. *2. For an output voltage of 50.1. *3. For K make an output voltage of 50.1. *3. For K make an output voltage of 50.1. *2. For an output voltage of 50.1. *3. For K make an output voltage of 50.1. *3. For K make an output voltage of 50.1. *2. For an output voltage of 50.1. *3. For K make an output voltage of 50.1. *4. For S make an output voltage of 50.1. *4. For S make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1. *4. For K make an output voltage of 50.1	A V to 100 V / 2.8 V to 200 V. Li STABILITY	mitted by the power capacity when ad, rated output. load power factor of 1, and in AC m of 1, with respect to stepwise clupter factor of 1, and in AC m of 1, with respect to stepwise clupter factor of 1, and in AC m of 1, with respect to stepwise clupter factor anum current, and load power factor anum current, and lo	V, no load, and 23 °C ± 5°C. the output voltage is 100 V to 250 V / 200 V to 500 V. 0.2% or less 0.5% or less (0 to 100%, via output 1 Vrms / 2 Vrms (TYP) range from an output current of 0 A to maximum current ITACE RESPONSE TIME, EFFICIENCY < 0.2% @50/60Hz < 0.3% @-500Hz < 0.1% For 45 Hz to 65 Hz and DC: ±(0.5 % For 45 Hz to 65 Hz and DC: ±(0.7 % for 45 Hz to 65 Hz and DC: ±(0.7 % of 0.1 V For 45 Hz to 65 Hz and DC: ±(0.7 % of 0.1 V For 45 Hz to 65 Hz and DC: ±(0.7 % of reading+0.1 A/0.05 A) For 45 Hz to 65 Hz and DC: ±(0.7 % of reading+0.1 A/0.05 A) For 45 Hz to 65 Hz and DC: ±(0.7 % of reading+0.1 A/0.05 A) For 45 Hz to 65 Hz and DC: ±(0.7 % of reading+0.1 A/0.05 A) For 45 Hz to 65 Hz and DC: ±(2 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: ±(2 % of reading+0.2 A/0.1 A) 1 W ±(2 % of reading+2 W) 1 VA ±(2 % of reading +2 W)	terminal) t (or its reverse), using the output terminal on the rear p int (or its reverse). 5 of reading + 0.5 V / 1 V) reading + 1 V / 2 V) of reading + 1 V / 2 V) For 45 Hz to 65 Hz and DC: $\pm (0.5 \% \text{ of reading}+0.15 \text{ A}/0.08 \text{ A})$ For all other frequencies: $\pm (0.7 \% \text{ of reading}+0.3 \text{ A}/0.15 \text{ A})$ For 45 Hz to 65 Hz and DC: $\pm (2\% \text{ of reading}+0.8 \text{ A}/0.4 \text{ A})$	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) For 45 Hz to 65 Hz and DC: ±([2 % of reading] + 1 A/0.5 A)	< 0.2% @50/60Hz < 0.5% @<500Hz < 1.0% @500.1Hz~2000Hz < 2.0% @2100Hz~5000Hz
 1.100 V / 200 V range. 1.2 For an output voltage of 1.2 Si For an output voltage of 1.4 Marked by the maximum of CUTPUT VOLTAGE S LINE REGULATION ⁶ 1.000 RECULATION ⁶ 1.0000 SUPE input voltage of 1.1 Si Fors 5 Hz to 1 MHz compto CUTPUT VOLTAGE V TOTAL HARMONIC I 0.0000 SUPUT VOLTAGE R EFFICIENCY ⁹ 1.4 Lan output voltage of 50 S. For X motor voltage of 50 VOLTAGE CURRENT 	4.4 Vio 100 V / 2.8 Vio 200 V. Li STABILITY *1 *2 *2 *1 *2 *2 *3 *4 Vio 100 Vio 200 Vio 7240 Vio no lo 000 Vio 200 Vio 200 Vio 400 Vio 3 *4 Vio 100 Vio 400	ad, rated output. load power factor of 1, stepwise cl put terminal on the rear panel. ON RATIO, OUTPUT VO ad power factor of 1, and in AC mr of 0, with respect to stepwise ch num current, and load power facto action Resolution Accuracy	V, no load, and 23 °C ± 5°C. the output voltage is 100 V to 250 V / 200 V to 500 V. 0.2% or less 0.5% or less (0 to 100%, via output 1 Vrms / 2 Vrms (TYP) vange from an output current of 0 A to maximum current LTAGE RESPONSE TIME, EFFICIENCY < 0.2% @50(60Hz < 0.2% @50(60Hz < 0.3% @-500Hz < 0.3% @-500Hz < 0.3% @-500Hz < 0.3% @ 500.1Hz~999.9Hz 100 µs (TYP) 20 % or more de. 100 µs (TYP) 20 % of reading+0.1 A/0.05 A) For 45 Hz to 65 Hz and DC: ±(0.5 % For all other frequencies: ±(0.7 % of 0.1 V For 45 Hz to 65 Hz and DC: ±(0.5 %) For 45 Hz to 65 Hz and DC: ±(0.5 %) For 45 Hz to 65 Hz and DC: ±(0.7 % of 0.1 A For 45 Hz to 65 Hz and DC: ±(0.7 % of reading+0.1 A/0.05 A) For 45 Hz to 65 Hz and DC: ±(0.2 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: ±(2 % of reading+0.2 A/0.1 A) 1 VA ±(2 % of reading +2 W) 1 VA ±(2 % of reading +2 VA)	terminal) t (or its reverse), using the output terminal on the rear p int (or its reverse). s of reading + 0.5 V / 1 V) reading + 1 V / 2 V) For 45 Hz to 65 Hz and DC: $\pm (0.5 \% \text{ of reading}+0.15 \text{ A}/0.08 \text{ A})$ For all other frequencies: $\pm (0.7 \% \text{ of reading}+0.3 \text{ A}/0.15 \text{ A})$ For 45 Hz to 65 Hz and DC: $\pm (2\% \text{ of reading}+0.8 \text{ A}/0.4 \text{ A})$ $\pm (2\% \text{ of reading}+3 \text{ W})$ $\pm (2\% \text{ of reading}+3 \text{ VA})$	Sonnel. 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) For 45 Hz to 65 Hz and DC: ±(12 % of reading + 1 A/0.5 A) ±(2 % of reading +4 W) ±(2 % of reading +4 VA)	<0.2% @50/60Hz <0.5% @<500Hz <1.0% @500.1Hz~2000Hz <2.0% @2100Hz~5000Hz
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 1.100 V / 200 V range. 1.2 For an output voltage of 1.2 2. For an output voltage of 1.4 3. For an output voltage of 1.4 4.4 4.5 4.5 4.5 4.5 4.6 4.6 4.7 4.7 4.7 4.8 4.8 4.9 <	A Vio 100 V / 2.8 Vio 200 V. Li STABILITY	ad, rated output. ad, rated output. load power factor of 1, stepwise cl put terminal on the rear panel. ON RATIO, OUTPUT VO ad power factor of 1, and in AC mr. of 1, with respect to stepwise classes of 1, with respect to stepwise and power factor of 1, with respect to stepwise and power factor accuracy 1 Resolution Accuracy 2 Resolution Accuracy 1 Resolution Resolution Resolution Resolution Range Resolution Range Resolution Range Full Scale	V, no load, and 23 °C ± 5°C. the output voltage is 100 V to 250 V / 200 V to 500 V. 0.2% or less 0.5% or less (0 to 100%, via output 1 Vrms / 2 Vrms (TYP) range from an output current of 0 A to maximum current LTACE RESPONSE TIME, EFFICIENCY < 0.2% @50/60Hz < 0.3% @-500Hz < 0.1% For 45 Hz to 65 Hz and DC: \pm (0.7% for all other frequencies: \pm (0.7% of 0.1 V For 45 Hz to 65 Hz and DC: \pm (0.5% for all other frequencies: \pm (0.7% of 0.1 V For 45 Hz to 65 Hz and DC: \pm (0.2% of reading+0.1 A/0.05 A) For 45 Hz to 65 Hz and DC: \pm (0.7% of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: \pm (2% of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: \pm (2% of reading+0.2 A/0.1 A) 1 VW \pm (2% of reading+2 W) 1 VA \pm (2% of reading +2 VA) 1 VAR \pm (2% of	terminal) t (or its reverse), using the output terminal on the rear p int (or its reverse). 5 of reading + 0.5 V / 1 V) reading + 1 V / 2 V) of reading + 1 V / 2 V) For 45 Hz to 65 Hz and DC: $\pm (0.5 \% 6f reading+0.3 A/0.15 A)$ For 45 Hz to 65 Hz and DC: $\pm (12 \% 6f reading+0.3 A/0.15 A)$ For 45 Hz to 65 Hz and DC: $\pm (12 \% 6f reading+0.3 A/0.15 A)$ $\pm (12 \% 6f reading+3 W)$ $\pm (2 \% 6f reading+3 VA)$ $\pm (2 \% 6f reading+3 VA)$ $\pm (2 \% 6f reading+3 VAR)$	Sanel. 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) For 45 Hz to 65 Hz and DC: ±(12 % of reading + 1 A/0.5 A) ±(2 % of reading +4 W) ±(2 % of reading +4 VA)	<0.2% @50/60Hz <0.5% @<500Hz <1.0% @500.1Hz~2000Hz <2.0% @2100Hz~5000Hz
P1: 100 V / 200 V range. P2: For an output voltage of 1: P2: For an output voltage of 1: P3: For an output voltage of 1: M4: Limited by the maximum of LIONE REGULATION * LIONE REGULATION * POWES NOT A CONTRACT OF POWER NOT A CONTRACT OF POWER NOT A CONTRACT OF POWER FACTOR LOAD POWER FACTOR LOAD CREST	A Vio 100 V / 2.8 Vio 200 V. Li STABILITY	ad, rated output. load power factor of 1, stepwise of put terminal on the rear panel. ON RATIO, OUTPUT VO ad power factor of 1, and in AC mm of 1, with respect to stepwise channer of 1, with respect to stepwise channer current, and load power factor of 1, and in AC mm of 1, with respect to stepwise channer current, and load power factor of 1, with respect to stepwise channer current, and load power factor of 1, and in AC mm of 1, with respect to stepwise channer current, and load power factor of 1, and in AC mm of 1, with respect to stepwise channer current, and load power factor of 1, with respect to stepwise channer current, and load power factor of 1, with respect to stepwise channer current, and load power factor factor of 1, with respect to stepwise channer current, and load power factor factor of 1, with respect to stepwise channer current, and load power factor factor of 1, with respect to stepwise channer current, and load power factor factor of 1, with respect to stepwise channer current, and load power factor factor of 1, with respect to stepwise channer current, and load power factor factor of 1, with respect to stepwise channer current, and load power factor factor of 1, with respect to stepwise channer current, and load power factor factor of 1, with respect to stepwise channer current, and load power factor of 1, with respect to stepwise channer current, and load power factor of 1, we currency ¹ Resolution Accuracy ¹ Resolution Accuracy ¹ Resolution Range Full Scale Resolution Accuracy ¹ Resolution Range Full Scale Resolution Accuracy ¹ Res	V, no load, and 23 °C ± 5°C. the output voltage is 100 V to 250 V / 200 V to 500 V. 0.2% or less 0.5% or less (0 to 100%, via output 1 Vrms / 2 Vrms (TYP) hange from an output current of 0 A to maximum current LTACE RESPONSE TIME, EFFICIENCY < 0.2% (@ 50)(6H z < 0.3% (@ -500H z < 0.3% (@ -500H z < 0.3% (@ -500H z < 0.3% (@ 500.1 Hz-999.9 Hz 100 µs (TYP) 80 % or more de. gre from an output current of 0 A to the maximum current of 1. 0.1 V For 45 Hz to 65 Hz and DC: \pm (0.5 % For all other frequencies: \pm (0.7 % of 0.1 V For 45 Hz to 65 Hz and DC: \pm (2% of reading+0.1 A/0.5 A) For 45 Hz to 65 Hz and DC: \pm (2% of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: \pm (2% of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: \pm (2% of reading+2 VA) 1 VA \pm (2% of reading +2 VA) 1 VAR \pm (2% of reading +2 VA) 1 (VAR) \pm (2% of reading	terminal) t (or its reverse), using the output terminal on the rear p t (or its reverse). s of reading + 0.5 V / 1 V) reading + 1 V / 2 V) of reading + 1 V / 2 V) For 45 Hz to 65 Hz and DC: $\pm (0.5 \% \text{ of reading}+0.15 \text{ A}/0.08 \text{ A})$ For all other frequencies: $\pm (0.7 \% \text{ of reading}+0.3 \text{ A}/0.15 \text{ A})$ For 45 Hz to 65 Hz and DC: $\pm (12\% \text{ of reading}+3 \text{ A})(0.4 \text{ A})$ $\pm (2\% \text{ of reading}+3 \text{ VA})$ $\pm (2\% \text{ of reading}+3 \text{ VA})$ $\pm (2\% \text{ of reading}+3 \text{ VAR})$ $\pm (2\% \text{ of reading}+3 \text{ VAR})$	Sanel. 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) For 45 Hz to 65 Hz and DC: ±(12 % of reading + 1 A/0.5 A) ±(2 % of reading +4 W) ±(2 % of reading +4 VA)	<0.2% @50/60Hz <0.5% @<500Hz <1.0% @500.1Hz~2000Hz <2.0% @2100Hz~5000Hz
 11.100 V/ 200 Vrange. 12. For an output voltage of 1.2 24. For an output voltage of 1.2 25. For an output voltage of 1.2 20.000 REGULATION * 20.000 REGULATION * 21.000 REGULATION * 22.000 REGULATION * 22.000 REGULATION * 22.000 REGULATION * 23.000 REGULATION * 23.000 REGULATION * 24.000 REGULATION * 24.000 REGULATION * 25.000 REGULATION * 24.000 REGULATION * 25.000 REGUL	44 Voi 100 V / 2.8 Vio 200 V. Li STABILITY *1 *2 *2 *2 *2 *2 *2 *3 *4 *4 *5 *4 *2 *2 *2 *3 *4 *4 *4 *4 *4 *5 *4 *4 *5 *5 *5 *6 *6 *7 *7 *7 *7 *7 *7 *8 *8 *9 *10 *10 *10 *10 *10 *10 *10 *10 *10 *10 *10 *10 *10 *10<	ad, rated output. Ioad power factor of 1, and in AC mr put terminal on the rear panel. ON RATIO, OUTPUT VO ad power factor of 1, and in AC mr of 1, with respect to stepwise channum current, and load power factor 1 Resolution Accuracy 2 1 Resolution Accuracy 3 1 Resolution 1 Resolution 1 Resolution 1 Resolution 1 Resolution 1 Range 1 Resolution 1 Range 1 Resolution 1 Range 1 Full Scale	V, no load, and 23 °C ± 5°C. the output voltage is 100 V to 250 V / 200 V to 500 V. 0.2% or less 0.5% or less (0 to 100%, via output 1 Vrms / 2 Vrms (TYP) ange from an output current of 0 A to maximum current LTACE RESPONSE TIME, EFFICIENCY < 0.2% (Ø 50/60Hz < 0.3% (Ø ±500Hz < 0.1% For 45 Hz to 65 Hz and DC: \pm (0.5% For all other frequencies: \pm (0.7% of 0.1 V For 45 Hz to 65 Hz and DC: \pm (12% 0.01 A For 45 Hz to 65 Hz and DC: \pm (12% 0.01 A For 45 Hz to 65 Hz and DC: \pm (12% 0.01 A For 45 Hz to 65 Hz and DC: \pm (2% of reading+0.1 A/0.05 A) For 45 Hz to 65 Hz and DC: \pm (2% of reading) + 0.5 A/0.25 A) 1 W \pm (2% of reading) + 0.5 A/0.25 A) 1 W \pm (2% of reading +2 VA) 1 VAR \pm (2% of reading +2 VA) 1 VAR \pm (2% of reading +2 VA) 1 UAR \pm (2% of reading +0.5 A/0.25 A) 1 U 1 Up to 100th order of the fundament 200 V / 400 V, 100% 0.1 V, 0.1% Up to 20th : \pm (0.2% of reading +0. 20 A/ 10 A, 100%	terminal) t (or its reverse), using the output terminal on the rear p t (or its reverse). s of reading + 0.5 V / 1 V) reading + 1 V / 2 V) of reading + 1 V / 2 V) For 45 Hz to 65 Hz and DC: $\pm (0.5 \% \text{ of reading}+0.15 \text{ A}/0.08 \text{ A})$ For all other frequencies: $\pm (0.7 \% \text{ of reading}+0.3 \text{ A}/0.15 \text{ A})$ For 45 Hz to 65 Hz and DC: $\pm (12\% \text{ of reading}+3 \text{ A})(0.4 \text{ A})$ $\pm (2\% \text{ of reading}+3 \text{ VA})$ $\pm (2\% \text{ of reading}+3 \text{ VA})$ $\pm (2\% \text{ of reading}+3 \text{ VAR})$ $\pm (2\% \text{ of reading}+3 \text{ VAR})$	Sanel. 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) For 45 Hz to 65 Hz and DC: ±(12 % of reading + 1 A/0.5 A) ±(2 % of reading +4 W) ±(2 % of reading +4 VA)	<0.2% @50/60Hz <0.5% @<500Hz <1.0% @500.1Hz~2000Hz <2.0% @2100Hz~5000Hz
H: 100 V / 200 V range. 22. For an output voltage of 1.2 3. For an output voltage of 1.2 4. Eintied by the mainmum C UTIPUT VOLTAGE S UTIPUT VOLTAGE S UTIPUT VOLTAGE S OUTPUT S OUTA	A Vio 100 V / 2.8 Vio 200 V. Li STABILITY	ad, rated output. load power factor of 1, stepwise cl put terminal on the rear panel. ON RATIO, OUTPUT VO ad power factor of 1, and in AC mr of 01, with respect to stepwise chanum current, and load power factor accuracy Resolution Range Full Scale Resolution Accuracy Resolution Range Full Scale Resolution Resolution Accuracy Resolution Range Full Scale Resolution Resolution Accuracy Resolution Resolution Range Full Scale Resolution Resolution Accuracy Resolution Resoluti Resolution Resolution Resolution Resolution Resolut	V, no load, and 23 °C ± 5°C. the output voltage is 100 V to 250 V / 200 V to 500 V. 0.2% or less 0.5% or less (0 to 100%, via output 1 Vrms / 2 Vrms (TYP) vange from an output current of 0 A to maximum current LTAGE RESPONSE TIME, EFFICIENCY < 0.2% @50(60Hz < 0.2% @50(60Hz < 0.3% @-500Hz < 0.3% @-500Hz < 0.3% @-500Hz < 0.3% @ 500.1Hz~999.9Hz 100 μ s (TYP) 20% or more de. 100 μ s (TYP) 20% of or adl of A to the maximum current of 1. 0.1 V For 45 Hz to 65 Hz and DC: \pm (0.5% For all other frequencies: \pm (0.7% of 0.1 V For 45 Hz to 65 Hz and DC: \pm (0.5%) For all other frequencies: \pm (0.7% of 0.1 N For 45 Hz to 65 Hz and DC: \pm (0.5%) For all other frequencies: \pm (0.7% of 0.1 N For 45 Hz to 65 Hz and DC: \pm (12% 0.01 A For 45 Hz to 65 Hz and DC: \pm (12% of reading+0.1 A/0.05 A) For 45 Hz to 65 Hz and DC: \pm (2% of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: \pm (2% of reading+0.2 A/0.1 A) 1 VA \pm (2% of reading +2 VA) 1 VA \pm (2% of reading +2 VA) 1 VA \pm (2% of reading +2 VA) 0.000 to 1.000 0.001 0.000 to 50.00 0.01 Up to 100th order of the fundament 200 V / 400 V, 100% 0.1 V, 0.1% 0.01 A, 100% 0.01 A, 0.1%	terminal) t (or its reverse), using the output terminal on the rear p int (or its reverse). S of reading + 0.5 V / 1 V) reading + 1 V / 2 V) For 45 Hz to 65 Hz and DC: $\pm (0.5 \% 6f reading+0.15 A/0.08 A)$ For all other frequencies: $\pm (0.7 \% 6f reading+0.3 A/0.15 A)$ For 45 Hz to 65 Hz and DC: $\pm (12\% 6f reading+0.3 A/0.15 A)$ i $\pm (2\% 6f reading+3 W)$ $\pm (2\% 6f reading+3 W)$ $\pm (2\% 6f reading+3 VA)$ $\pm (2\% 6f reading+3 VAR)$ i $\pm $	Sarrel. 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) For 45 Hz to 65 Hz and DC: ±(12 % of reading +1 A/0.5 A) ±(2 % of reading +4 W) ±(2 % of reading +4 VA) ±(2 % of reading +4 VA) ±(2 % of reading +4 VA)	<0.2% @50/60Hz <0.5% @<500Hz <1.0% @500.1Hz~2000Hz <2.0% @2100Hz~5000Hz
 11.100 V/ 200 Vrange. 12. For an output voltage of 1.2 24. For an output voltage of 1.2 25. For an output voltage of 1.2 20.000 REGULATION * 20.000 REGULATION * 21.000 REGULATION * 22.000 REGULATION * 22.000 REGULATION * 22.000 REGULATION * 23.000 REGULATION * 23.000 REGULATION * 24.000 REGULATION * 24.000 REGULATION * 25.000 REGULATION * 24.000 REGULATION * 25.000 REGUL	A Vio 100 V / 2.8 Vio 200 V. Li STABILITY	ad, rated output. Ioad power factor of 1, and in AC mr put terminal on the rear panel. ON RATIO, OUTPUT VO ad power factor of 1, and in AC mr of 1, with respect to stepwise channum current, and load power factor 1 Resolution Accuracy 2 1 Resolution Accuracy 3 1 Resolution 1 Resolution 1 Resolution 1 Resolution 1 Resolution 1 Range 1 Resolution 1 Range 1 Resolution 1 Range 1 Full Scale	V, no load, and 23 °C ± 5°C. the output votage is 100 V to 250 V / 200 V to 500 V. 0.2% or less 0.5% or less (0 to 100%, via output 1 Vrms / 2 Vrms (TYP) hange from an output current of 0 A to maximum current LTAGE RESPONSE TIME, EFFICIENCY < 0.2% (0 50)(6Hz < 0.3% (0 -500Hz < 0.3% (0 -500Hz < 0.3% (0 -500Hz < 0.3% (0 -5000Hz < 0.3% (0 -5000Hz < 0.5% (0 500.1Hz-999.9Hz 100 μ s (TYP) 80 % or more ide: regr form an output current of 0 A to the maximum current of 1. 0.1 V For 45 Hz to 65 Hz and DC: ± (0.5 % For all other frequencies: ± (0.7 % of 0.1 V For 45 Hz to 65 Hz and DC: ± (12 % 0.01 A For 45 Hz to 65 Hz and DC: ± (12 % 0.01 A For 45 Hz to 65 Hz and DC: ± (12 % 0.01 A For 45 Hz to 65 Hz and DC: ± (12 % 0.01 A For 45 Hz to 65 Hz and DC: ± (12 % of reading+0.1 A)(0.05 A) For 45 Hz to 65 Hz and DC: ± (12 % of reading+0.2 A)(0.1 A) 0.1 A Ero 45 Hz to 65 Hz and DC: ± (12 % of reading +2 W) 1 VA ± (2 % of reading +2 W) 1 VA ± (2 % of reading +2 VA) 1 VA ± (2 % of reading +2 VA) 0.000 to 1.000 0.001 0.00 to 50.00 0.01 Up to 20th : ± (0.2 % of reading +0. 200 V / 400 V, 100% 0.1 V, 0.1% Up to 20th : ± (0.2 % of reading +1) 200 V / 100 X, 01% 0.01 A, 0.1% Up to 20th	terminal) t (or its reverse), using the output terminal on the rear p int (or its reverse). S of reading + 0.5 V / 1 V) reading + 1 V / 2 V) of reading + 1 V / 2 V) For 45 Hz to 65 Hz and DC: $\pm (0.5 \% \text{ of reading}+0.15 \text{ A}/0.08 \text{ A})$ For 45 Hz to 65 Hz and DC: $\pm (2\% \text{ of reading}+0.3 \text{ A}/0.15 \text{ A})$ For 45 Hz to 65 Hz and DC: $\pm (12\% \text{ of reading}+3 \text{ A}/0.4 \text{ A})$ $\pm (2\% \text{ of reading}+3 \text{ W})$ $\pm (2\% \text{ of reading}+3 \text{ W})$ $\pm (2\% \text{ of reading}+3 \text{ VAR})$ al wave 30 A/15 A, 100% Up to 20th	Sanel. 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) For 45 Hz to 65 Hz and DC: ±(12 % of reading +1 A/0.5 A) ±(2 % of reading +4 VA) ±(2 % of reading +4 VA)	<0.2% @50/60Hz <0.5% @<500Hz <1.0% @500.1Hz~2000Hz <2.0% @2100Hz~5000Hz
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			ASR-3200	ASR-3300	ASR-3400	ASR-3400HF		
1. The voltage display is set t	RMS in AC/AC+DC mode a	nd AVG in DC mode.						
2. AC mode: For an output vo	ltage of 20 V to 200 V / 40 V	to 400 V and 23 °C ± 5 °C. DC m	ode: For an output voltage of 28.5 V to 285 V / 57 V to 570	V and 23 °C ± 5 °C.				
		aximum current, and 23 °C ± 5 °						
			e, an output current in the range of 5 % to 100 % of the m of the maximum current, DC or an output frequency of 45		± 5 °C. The accuracy of the peak value is for a wavef	orm of DC or sine wave.		
	powers are not displayed in the		to the maximum current, DC or an output requercy or 40	112 10 03 112, and 23 C ± 5 C.				
	e load with the power factor							
8. An output voltage in the ra	nge of 20 V to 200 V / 40 V to	400 V and 23 °C ± 5 °C.						
DTHERS								
PROTECTIONS			UVP, OCP, OTP, OPP, Fan Fail					
DISPLAY			TFT-LCD, 4.3 inch					
MEMORY FUNCTION			Store and recall settings, Basic sett	ings: 10 (0~9 numeric keys)				
ARBITRARY WAVE	Number of Mem	ories	16 (nonvolatile)					
	Waveform Lengt	h	4096 words					
NTERFACE	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 RESIST	ANCE		500 Vdc, 30 MΩ or more					
Between input and chassi		put and output						
WITHSTAND VOLTAG	E		1500 Vac, 1 minute					
Between input and chassi	s, output and chassis, in	put and output						
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 Enviro	onment	Indoor use, Overvoltage Category II					
	Operating Temp	erature Range	0 °C to 40 °C					
	Storage Tempera	ature Range	-10 °C to 70 °C					
	Operating Humi		20 % to 80 % RH (no condensation)					
	Storage Humidity Range		90 % RH or less (no condensation)					
	Altitude		Up to 2000 m					
DIMENSIONS & WEI	GHT		430(W)×176(H)×530(D) mm (not	ncluding protrusions); Approx. 25kg				
				SI	pecifications subject to change witl	hout notice. ASR-3000		
OPDERING	NFORMATIO	M		OPTIONAL ACCESSORIES				

ASR-3300 3kVA Programmable AC/DC Power Source ASR-3400 4kVA Programmable AC/DC Power Source ASR-3400HF 4kVA Programmable AC/DC Power Source CCESSORIES

CD (User manual/Programming manual), Safety guide, Input terminal cover, Output terminal cover Include remote sensing, GRA-442-E Rack mount adapter(EIA), GTL-246 USB Cable

OPTION/	AL ACCESSORIES		
GPW-005	Power Cord, 3m, 105°C , UL/CSA Type	GTL-232	RS232C Cable, approx. 2m
GPW-006	Power Cord, 3m, 105 °C , VDE Type (ASR-3200, ASR-3300 Ues Only)		GPIB Cable, approx. 2m External three phase control
	Power Cord, 3m, 105°C , PSE Type		unit for IP2W, IP3W, 3P4W
GRA-442-J	Rack mount adapter(JIS)		output
GTL-137	Output power wire	APS-008	Air inlet filter
	(Load wire_10AWG:50A, 600V/Sense wire_16AWG:20A, 600V)	GET-006	Universal Extension
ASR-C003	Modbus TCP feature	* Europea	n Output Outlet(factory installed)

APS-008

GET-006 Universal extension

(AC signel phase 250V/13Amps)





GRA-442-J

* Basis Requirement of ASR-002 to ASR-Series 1. Must be the three same models of ASR-Series

- * Functions of ASR-Series are limited when conducts to ASR-002
- 1. No DC Output
- 2. Measurement Items: only current(A), power(W) and PF for each phase
 3. No Voltage and Current Harmonic Analysis
 4. No Remote Sensing Capability
 5. No Arbitrary Waveform Function
 6. No Sequence and Simulation Function
 7. Not supported External Control I/O

GTL-137

8. No memory Function 9. Only support USB, no LAN port for communication

Global Headquarters

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