

ASR-3000 Series

Programmable AC/DC Power Source

FEATURES

- Output Rating: AC 0 ~ 400 Vrms, DC 0 ~ ± 570 V
- Output Frequency up to 999.9 Hz
- 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 three models of the series: ASR-3200(2kVA), ASR-3300(3kVA) and ASR-3400 (4kVA). The series can provide rated power output during AC output and DC output. Nine 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-ADD Mode), 7) External AC/DC signal superimposition 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).

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.

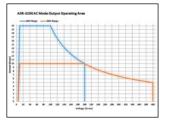
The ASR-3000 Series provides users with waveform output capabilities including 1) Sequence mode generates waveform fallings, surges, sags, changes and other abnormal power line conditions; 2) Arbitrary waveform function allows users to store/upload userdefined waveforms; and 3) Simulate mode simulates 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, 40th-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.

CE RS-232 USB GPIB LAN Ext I/O 1. Air Inlet 4000 2. LCD Screen 5.00 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

PANEL INTRODUCTION

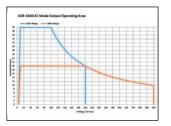
OPERATING AREA FOR ASR-3000 SERIES

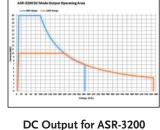


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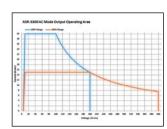
AC Output for ASR-3200

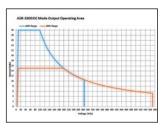




ALE MODE Charles Degran Operating Area

DC Output for ASR-3400





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

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.

AC Output for ASR-3400

MEASUREMENT ITEMS FOR ASR-3000 SERIES

ON	% AUTOSIN			()	
v	350.0 Vrms	Р	0.0	w	[Simple] Harm
1	0.01 Arms	s	2.8	VA	[RMS]
		Q	+2.8	var	PEAK
		PF	0.000		
lpkH	+0.19 Apk	CF	0.00		[RUN] HOLD

RMS Meas Display

AVG Meas Display

+0.19

+2.9

0.00

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

Peak Meas Display

ON	ON	ON	ON 94	% 200V SQU		1
Harr	Harn	Harn	Harmon	ic 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.

ON ON ON 94 % 200V SOUL Image: Constraint of the state of the stat

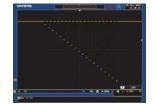
Voltage Harmonic

The ASR-3000 Series provides users with measurement capabilities including Vrms, Vavg, Vpeak, Irms, Iavg, Ipeak, IpkH, P, S, Q, PF, CF, 40th-order Voltage Harmonic and Current Harmonic. During the power output, the measurement

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

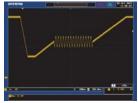


SEQ6: Momentary Drop in Supply Voltage

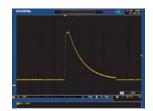


SEQ7: Reset Behavior at Voltage Drop with 12V System

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.



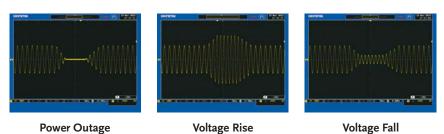
SEQ8: Starting Profile Waveform



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.

FUNCTION WAVEFORM (ARBITRARY EDIT) MODE STAL CUP APP NO **TRI Waveform** Fourier Series Synthesized Waveform **STAIR Waveform CLIP** Waveform SURGE Waveform

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),

ASR-3000 Series provides more than 20,000 waveform combinations then the waveform is loaded into the ARB 1~16 waveform register through the access procedures, and return to the main menu output mode to perform ARB Waveform output.

PC SOFTWARE



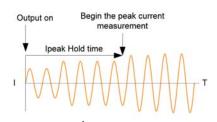
Basic Controller



Sequence Mode

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.

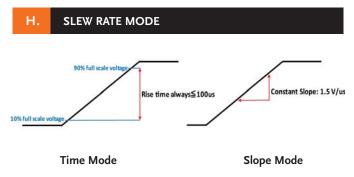




ARB Waveform Edit

The Waveform is Observed with DSO

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.

		ASR-3200	ASR-3300	ASR-3400			
INPUT RATING (AC)		A3N-3200	A3R-3300	A31-3400			
NORMINAL INPUT VOLTAGE		200 Vac to 240 Vac	200 Vac to 240 Vac	200 Vac to 240 Vac			
INPUT VOLTAGE RANGE		180 Vac to 264 Vac	180 Vac to 264 Vac	180 Vac to 264 Vac			
PHASE		Single phase, Two-wire	Single phase, Two-wire	Single phase, Two-wire			
NORMINAL INPUT FREQUEN	ICY	50 Hz to 60 Hz	50 Hz to 60 Hz	50 Hz to 60 Hz			
INPUT FREQUENCY RANGE		47 Hz to 63 Hz	47 Hz to 63 Hz	47 Hz to 63 Hz			
MAX. POWER CONSUMPTION POWER FACTOR ^{®1} 200Vac		2500 VA or less	3750 VA or less	5000 VA or less			
POWER FACTOR ^{®1} 200Vac MAX. INPUT CURRENT 200Vac		0.95 (TYP) 15 A	0.95 (TYP) 22.5 A	0.95 (TYP) 30 A			
		aximum current, and a load power factor of 1.	22.3 A	307			
AC MODE OUTPUT RATINGS	(AC rms)						
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) Single phase Two-wire					
OUTPUT PHASE	200.1/	Single phase, Two-wire 40 A 20 A 30 A 40 A					
MAXIMUM CURRENT ³³	100 V 200 V	10 A	20 A				
MAXIMUM PEAK CURRENT ^{*4}	100 V	120 A	15 A 180 A	20 A 240 A			
	200 V	60 A	90 A	120 A			
OAD POWER FACTOR		0 to 1 (leading phase or lagging phase)	0 to 1 (leading phase or lagging phase)	0 to 1 (leading phase or lagging phase)			
OWER CAPACITY		2000 VA	3000 VA	4000 VA			
REQUENCY	Setting Range	AC Mode: 40.00 Hz to 999.9 Hz, AC+DC M	ode: 1.00 Hz to 999.9 Hz				
	Setting Resolution	0.01 Hz (1.00 to 99.99 Hz), 0.1 Hz (100.0 to					
	Accuracy	0.02% of set (23 °C ± 5 °C)					
	Stability ^{*5}	± 0.005%					
OUTPUT ON PHASE		0° to 359° variable (setting resolution 1°) Within ± 20 mV (TYP)					
DC OFFSET[®] *1. 100 V / 200 V range *2. For an o	utput voltage of 20 V to 20	$1 \times 10^{-11} \pm 20$ mV (11P) 00 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 superim	position, the current of AC+DC mode satisfies the			
*4. With respect to the capacitor-input	t rectifying load. Limited b						
*5. For 45 Hz to 65 Hz, the rated outp	ut voltage, no load and th	ne resistance load for the maximum current, and the ope	rating temperature. *6. In the case of the AC mode a	nd 23°C ± 5°C.			
OUTPUT RATING FOR DC MC	41						
VOLTAGE	Setting Range	-285 V to + 285 V / -570 V to +570 V 0.1 V					
	Accuracy ^{*2}	±(1 % of set + 1 V / 2 V)					
	100 V	20 A	30 A	40 A			
MAXIMUM CURRENT ^{*3}	200 V	10 A	15 A	20 A			
MAXIMUM PEAK CURRENT*	100 V	120 A	180 A	240 A			
POWER CAPACITY	200 V	60 A	90 A	120 A			
	output voltage of -285 V t	2000 W to -28.5 V, +28.5 V to +285 V / -570 V to -57 V, +57 V to +	3000 W 570 V no load and 23°C+ 5°C	4000 W			
	00 V / 2.8 V to 200 V. Lim	ited by the power capacity when the output voltage is 10	0 V to 250 V / 200 V to 500 V. *4. Limited by the ma	ximum current.			
OUTPUT VOLTAGE STABILITY	,	lited by the power capacity when the output voltage is 10	10 V to 250 V / 200 V to 500 V. *4. Limited by the ma	ximum current.			
OUTPUT VOLTAGE STABILITY	,	±0.2% or less		ximum current.			
OUTPUT VOLTAGE STABILITY LINE REGULATION ^{*1} LOAD REGULATION ^{*2}	,	±0.2% or less 0.5% or less (0 to 100%, via output termina		ximum current.			
OUTPUT VOLTAGE STABILITY LINE REGULATION ^{*1} LOAD REGULATION ^{*2} RIPPLE NOISE ^{*3}		±0.2% or less 0.5% or less (0 to 100%, via output termina 1 Vrms / 2 Vrms (TYP))				
OUTPUT VOLTAGE STABILITY LINE REGULATION ^{*1} LOAD REGULATION ^{*2} RIPPLE NOISE ^{*3} *1. Power source input voltage is 200 maximum current(or its reverse), t	V, 220 V, or 240 V, no load using the output terminal	±0.2% or less 0.5% or less (0 to 100%, via output termina 1 Vrms / 2 Vrms (TYP) I, rated output. *2. For an output voltage of 100 V to 20 on the rear panel. 3. For 5 Hz to 1 MHz components in	l) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan	e change from an output current of 0 A to			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹⁷ LOAD REGULATION ¹² RIPPLE NOISE ¹³ *1. Power source input voltage is 200 maximum current(or its reverse), t	V, 220 V, or 240 V, no load using the output terminal	±0.2% or less 0.5% or less (0 to 100%, via output termina 1 Vrms / 2 Vrms (TYP) I, rated output. *2. For an output voltage of 100 V to 20	l) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan	e change from an output current of 0 A to			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹³ LOAD REGULATION ¹² RIPPLE NOISE ¹³ *1. Power source input voltage is 200 maximum current (or its reverse), 1 OUTPUT VOLTAGE WAVEFOR	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT	±0.2% or less 0.5% or less (0 to 100%, via output termina 1 Vrms / 2 Vrms (TYP) I, rated output. *2. For an output voltage of 100 V to 20 on the rear panel. 3. For 5 Hz to 1 MHz components in	l) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY	e change from an output current of 0 A to			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹³ LOAD REGULATION ¹² RIPPLE NOISE ¹³ *1. Power source input voltage is 200 maximum current(or its reverse), I OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONS	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD)	\pm 0.2% or less 0.5% or less (0 to 100%, via output termina 1 Vrms / 2 Vrms (TYP) I, rated output. *2. For an output voltage of 100 V to 20 on the rear panel. 3. For 5 Hz to 1 MHz components in TIO, OUTPUT VOLTAGE RESPONSE TIME, EF \leq 0.2% @50/60Hz, \leq 0.3% @<500Hz, \leq 0.5% 100 us (TYP)	l) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY	e change from an output current of 0 A to			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹³ LOAD REGULATION ¹² RIPPLE NOISE ¹³ ¹³ . Power source input voltage is 200 maximum current(or its reverse), I OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONSI EFFICIENCY ¹³	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ^{*1} E TIME ^{*2}		l) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @500.1Hz-999.9Hz	e change from an output current of 0 A to el.			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹¹ LOAD REGULATION ¹² RIPPLE NOISE ¹³ *1. Power source input voltage is 200 maximum current(or its reverse), 1 OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONSI EFFICIENCY ¹³ *1. At an output voltage of 50 V to 200	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ⁵¹ E TIME ⁵² DV / 100 V to 400 V, a loac	\pm 0.2% or less 0.5% or less (0 to 100%, via output termina 1 Vrms / 2 Vrms (TYP) I, rated output. *2. For an output voltage of 100 V to 20 on the rear panel. 3. For 5 Hz to 1 MHz components in TIO, OUTPUT VOLTAGE RESPONSE TIME, EF \leq 0.2% @50/60Hz, \leq 0.3% @<500Hz, \leq 0.5% 100 us (TYP)	I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @ 500.1 Hz-999.9 Hz voltage of 100 V / 200 V, a load power factor of 1, with	e change from an output current of 0 A to el.			
OUTPUT VOLTAGE STABILITY LINE REGULATION ^{*1} LOAD REGULATION ^{*2} RIPPLE NOISE ^{*3} *1. Power source input voltage is 200 maximum current(or its reverse), I OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONS EFFICIENCY ^{*3} *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cur	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ⁵¹ E TIME ⁵² DV / 100 V to 400 V, a loac	\pm 0.2% or less 0.5% or less (0 to 100%, via output termina 1 Vrms / 2 Vrms (TYP) (, rated output. *2. For an output voltage of 100 V to 20 on the rear panel. 3. For 5 Hz to 1 MHz components in TIO_OUTPUT VOLTAGE RESPONSE TIME, EF $\leq 0.2\% @50/60Hz, \leq 0.3\% @<500Hz, \leq 0.5'$ 100 us (TYP) 80 % or more d power factor of 1, and in AC mode. *2. For an output	I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @ 500.1 Hz-999.9 Hz voltage of 100 V / 200 V, a load power factor of 1, with	e change from an output current of 0 A to el.			
OUTPUT VOLTAGE STABILITY LINE REGULATION ^{*1} LOAD REGULATION ^{*2} RIPPLE NOISE ^{*3} *1. Power source input voltage is 200 maximum current(or its reverse), I OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONSI EFFICIENCY ^{*3} *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cur MEASURED VALUE DISPLAY	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ^{*1} E TIME^{*2} DV / 100 V to 400 V, a load rent (or its reverse). *3. Resolution		I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @500.1Hz-999.9Hz voltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1.	e change from an output current of 0 A to el. h respect to stepwise change from an output			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹¹ LOAD REGULATION ¹² RIPPLE NOISE ¹³ *1. Power source input voltage is 200 maximum current(or its reverse), I OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONSI EFFICIENCY ²³ *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cur MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ¹¹	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ^{*1} E TIME ^{*2} DV / 100 V to 400 V, a loac rent (or its reverse). *3. Resolution Accuracy ^{*2}		I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @500.1Hz-999.9Hz voltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1.	e change from an output current of 0 A to el. h respect to stepwise change from an output			
OUTPUT VOLTAGE STABILITY LINE REGULATION ^{*1} LOAD REGULATION ^{*2} RIPPLE NOISE ^{*3} *1. Power source input voltage is 200 maximum current(or its reverse), I OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONSI EFFICIENCY ^{*3} *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cur MEASURED VALUE DISPLAY	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ^{*1} E TIME ^{*2} V / 100 V to 400 V, a loac rrent (or its reverse). *3. Resolution Accuracy ^{*2} Resolution		I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @500.1 Hz-999.9 Hz voltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1. ling + 0.5 V/1 V); For all other frequencies: =	e change from an output current of 0 A to el. h respect to stepwise change from an output			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹¹ LOAD REGULATION ¹² RIPPLE NOISE ¹³ *1. Power source input voltage is 200 maximum current(or its reverse), I OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONSI EFFICIENCY ²³ *1. At an output voltage of 50 V to 200 current of 0 A to the maximum curr MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ¹¹ PEAK Value	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ⁴¹ E TIME ⁴² DV / 100 V to 400 V, a loac rent (or its reverse). *3. Resolution Accuracy ⁴² Resolution Accuracy	$ \pm 0.2\% \text{ or less} $ $ 0.5\% \text{ or less} (0 \text{ to } 100\%, \text{ via output termina} $ $ 1 \text{ Vrms} / 2 \text{ Vrms} (TYP) $ $ I, \text{ rated output. *2. For an output voltage of 100 V to 20 on the rear panel. 3. For 5 Hz to 1 MHz components in TO, OUTPUT VOLTAGE RESPONSE TIME, EF \leq 0.2\% @ 50/60 \text{Hz}, \leq 0.3\% @ < 500 \text{Hz}, \leq 0.5' \\ 100 \text{ us} (TYP) \\ 80\% \text{ or more} \\ d power factor of 1, and in AC mode. *2. For an output For AC mode, at an output voltage of 100 V / 200 V, max \\ 0.1 V For 45 Hz to 65 Hz and DC: ±(0.5\% of read of 0.1 V For 45 Hz to 65 Hz and DC: ±(12\% of read in the second secon$	I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @ 500.1 Hz-999.9 Hz voltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1. ling + 0.5 V/1 V); For all other frequencies: : ng + 1 V / 2 V)	e change from an output current of 0 A to el. h respect to stepwise change from an output ±(0.7 % of reading + 1 V / 2 V)			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹¹ LOAD REGULATION ¹² RIPPLE NOISE ¹³ *1. Power source input voltage is 200 maximum current(or its reverse), I OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONSI EFFICIENCY ²³ *1. At an output voltage of 50 V to 200 current of 0 A to the maximum curr MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ¹¹ PEAK Value	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ⁴⁷ E TIME ⁵² DV / 100 V to 400 V, a loac rent (or its reverse). *3. Resolution Accuracy ⁷² Resolution Accuracy Resolution		 I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @ 500.1 Hz-999.9 Hz voltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1. ling + 0.5 V/1 V); For all other frequencies: : ng + 1 V / 2 V) 0.01 A 	e change from an output current of 0 A to el. h respect to stepwise change from an output ±(0.7 % of reading + 1 V / 2 V) 0.01 A			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹¹ LOAD REGULATION ¹² RIPPLE NOISE ¹³ *1. Power source input voltage is 200 maximum current(or its reverse), I OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONSI EFFICIENCY ²¹ *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cur MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ¹¹	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ⁴¹ E TIME ⁴² DV / 100 V to 400 V, a loac rent (or its reverse). *3. Resolution Accuracy ⁴² Resolution Accuracy		 I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis IDC mode using the output terminal on the rear pan FICIENCY % @ 500.1Hz-999.9Hz voltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1. ling + 0.5 V/1 V); For all other frequencies: = ng[+ 1 V / 2 V) 0.01 A For 45 Hz to 65 Hz and DC:±(0.5 % of 	e change from an output current of 0 A to el. h respect to stepwise change from an output ±(0.7 % of reading + 1 V / 2 V) 0.01 A For 45 Hz to 65 Hz and DC:±(0.5 % of			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹¹ LOAD REGULATION ¹² RIPPLE NOISE ¹³ *1. Power source input voltage is 200 maximum current(or its reverse), I OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONSI EFFICIENCY ²³ *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cur MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ⁵¹ PEAK Value CURRENT RMS, AVG Value	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ^{*1} E TIME ^{*2} DV / 100 V to 400 V, a loac rent (or its reverse). *3. Resolution Accuracy ^{*2} Resolution Accuracy Resolution Accuracy ^{*3}	$ \pm 0.2\% \text{ or less} $ $ 0.5\% \text{ or less} (0 \text{ to 100\%, via output termina} 1 \text{ Vrms} / 2 \text{ Vrms} (TYP) $ $ I, rated output. *2. For an output voltage of 100 V to 20 on the rear panel. 3. For 5 Hz to 1 MHz components in TIO, OUTPUT VOLTAGE RESPONSE TIME, EF \leq 0.2\% @ 50/60 \text{ Hz}, \leq 0.3\% @ < 500 \text{ Hz}, \leq 0.5' 100 \text{ us} (TYP) 80\% \text{ or more} d power factor of 1, and in AC mode. *2. For an output For AC mode, at an output voltage of 100 V / 200 V, maximum for 45 Hz to 65 Hz and DC: ±(0.5\% of readi 0.1 V For 45 Hz to 65 Hz and DC: ±(12\% of readi 0.01 A 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) $	I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @ 500.1 Hz-999.9 Hz voltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1. ling + 0.5 V/1 V); For all other frequencies: : ng] + 1 V / 2 V) 0.01 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)	te change from an output current of 0 A to el. h respect to stepwise change from an output ±(0.7 % of reading + 1 V / 2 V) 0.01 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			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹¹ LOAD REGULATION ¹² RIPPLE NOISE ¹³ *1. Power source input voltage is 200 maximum current(or its reverse), I OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONSI EFFICIENCY ²³ *1. At an output voltage of 50 V to 200 current of 0 A to the maximum curr MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ¹¹ PEAK Value	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ¹⁷ E TIME ¹² OV / 100 V to 400 V, a loac rrent (or its reverse). *3. Resolution Accuracy ¹² Resolution Accuracy Resolution Accuracy ¹³ Resolution	$ \begin{array}{c} \pm 0.2\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 1 \text{ Vrms} / 2 \text{ Vrms} (TYP) \\ 1, rated output. *2. For an output voltage of 100 V to 20 on the rear panel. 3. For 5 Hz to 1 MHz components in FIO. OUTPUT VOLTAGE RESPONSE TIME, EF \\ &\leq 0.2\% @50/60 \text{Hz}, \leq 0.3\% @<500 \text{Hz}, \leq 0.5^{\circ} \\ 100 \text{ us} (TYP) \\ 80\% \text{ or more} \\ 100 \text{ us} (TYP) \\ 80\% \text{ or more} \\ 0.1 \text{ V} \\ \text{For 45 Hz to 65 Hz and DC: } \pm (0.5\% \text{ of read}) \\ 10.1 \text{ A} \\ \text{For 45 Hz to 65 Hz and DC: } \pm (12\% \text{ of read}) \\ 10.1 \text{ A} \\ \text{For 45 Hz to 65 Hz and DC: } \pm (0.5\% \text{ of read}) \\ 10.1 \text{ A} \\ \text{For 45 Hz to 65 Hz and DC: } \pm (0.5\% \text{ of read}) \\ 10.1 \text{ A} \\ \text{For 45 Hz to 65 Hz and DC: } \pm (0.5\% \text{ of read}) \\ 10.1 \text{ A} \\ $	I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @ 500.1Hz-999.9Hz voltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1. ling + 0.5 V/1 V); For all other frequencies: : ng + 1 V / 2 V) 0.01 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) 0.1 A	e change from an output current of 0 A to el. h respect to stepwise change from an output ±(0.7 % of reading + 1 V / 2 V) 0.01 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 0.1 A			
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OUTPUT VOLTAGE STABILITY LINE REGULATION ¹³ LOAD REGULATION ¹² RIPPLE NOISE ¹³ ¹¹ . Power source input voltage is 200 maximum current(or its reverse), 1 OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONS EFFICIENCY ¹³ ¹² . At an output voltage of 50 V to 200 current of 0 A to the maximum cur MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ¹³ PEAK Value CURRENT RMS, AVG Value	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ^{*1} E TIME ^{*2} DV / 100 V to 400 V, a loac rent (or its reverse). *3. Resolution Accuracy ^{*2} Resolution Accuracy Resolution Accuracy ^{*3} Resolution Accuracy ^{*4} Resolution		 I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis DC mode using the output terminal on the rear pan FICIENCY % @ 500.1Hz-999.9Hz woltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1. ling + 0.5 V/1 V); For all other frequencies:: : ng] + 1 V / 2 V) 0.01 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) 0.1 A For 45 Hz to 65 Hz and DC:±(12 % of reading] + 0.8 A/0.4 A) 1 W 	e change from an output current of 0 A to el. h respect to stepwise change from an output ±(0.7 % of reading + 1 V / 2 V) 0.01 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 0.1 A For 45 Hz to 65 Hz and DC:±(2 % of reading + 1 A/0.5 A) 1 W			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹³ LOAD REGULATION ¹² RIPPLE NOISE ¹³ ¹¹ . Power source input voltage is 200 maximum current(or its reverse), i OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONSE EFFICIENCY ¹³ ¹² . At an output voltage of 50 V to 200 current of 0 A to the maximum current MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ¹¹ PEAK Value CURRENT RMS, AVG Value PEAK Value PEAK Value	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ^{*1} E TIME ^{*2} DV / 100 V to 400 V, a loac rent (or its reverse). *3. Resolution Accuracy ^{*2} Resolution Accuracy Resolution Accuracy ^{*3} Resolution Accuracy ^{*4}		I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @500.1Hz-999.9Hz voltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1. ling + 0.5 V/1 V); For all other frequencies: : ng + 1 V / 2 V) 0.01 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) 0.1 A For 45 Hz to 65 Hz and DC:±(I2 % of reading + 0.8 A/0.4 A) 1 W ±(2 % of reading + 3 W)	te change from an output current of 0 A to el. h respect to stepwise change from an output ±(0.7 % of reading + 1 V / 2 V) 0.01 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 0.1 A For 45 Hz to 65 Hz and DC:±(2 % of reading + 1 A/0.5 A) 1 W ±(2 % of reading + 4 W)			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹³ LOAD REGULATION ¹² RIPPLE NOISE ¹³ *1. Power source input voltage is 200 maximum current(or its reverse), 1 OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONS EFFICIENCY ¹³ *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cur MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ⁵¹ PEAK Value CURRENT RMS, AVG Value	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ¹⁷ E TIME ¹² OV / 100 V to 400 V, a loac rrent (or its reverse). *3. Resolution Accuracy ¹² Resolution Accuracy ¹³ Resolution Accuracy ¹⁴ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution		 I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @ 500.1 Hz-999.9 Hz woltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1. ling + 0.5 V/1 V); For all other frequencies:: ng + 1 V / 2 V) 0.01 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) 0.1 A For 45 Hz to 65 Hz and DC:±(2 % of reading + 0.8 A/0.4 A) 1 W ±(2 % of reading + 3 W) 1 VA 	ie change from an output current of 0 A to el. h respect to stepwise change from an output ±(0.7 % of reading + 1 V / 2 V) 0.01 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 0.1 A For 45 Hz to 65 Hz and DC:±(2 % of reading + 1 A/0.5 A) 1 W ±(2 % of reading + 4 W) 1 VA			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹³ LOAD REGULATION ¹² RIPPLE NOISE ¹³ ¹⁴ . Power source input voltage is 200 maximum current(or its reverse), i OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONSE EFFICIENCY ¹³ ¹⁴ . At an output voltage of 50 V to 200 current of 0 A to the maximum cur MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ¹¹ PEAK Value CURRENT RMS, AVG Value PEAK Value PEAK Value	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ^{*1} E TIME ^{*2} DV / 100 V to 400 V, a loac rent (or its reverse). *3. Resolution Accuracy ^{*2} Resolution Accuracy Resolution Accuracy ^{*3} Resolution Accuracy ^{*4}		I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @500.1Hz-999.9Hz voltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1. ling + 0.5 V/1 V); For all other frequencies: : ng + 1 V / 2 V) 0.01 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) 0.1 A For 45 Hz to 65 Hz and DC:±(2 % of reading + 0.8 A/0.4 A) 1 W ±(2 % of reading + 3 W)	te change from an output current of 0 A to el. h respect to stepwise change from an output ±(0.7 % of reading + 1 V / 2 V) 0.01 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 0.1 A For 45 Hz to 65 Hz and DC:±(2 % of reading + 1 A/0.5 A) 1 W ±(2 % of reading + 4 W)			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹³ LOAD REGULATION ¹² RIPPLE NOISE ¹³ ¹¹ . Power source input voltage is 200 maximum current(or its reverse), i OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTION OUTPUT VOLTAGE RESPONSI EFFICIENCY ¹³ ¹³ . At an output voltage of 50 V to 200 current of 0 A to the maximum cur MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ¹¹ PEAK Value CURRENT RMS, AVG Value PEAK Value PEAK Value PEAK Value	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ¹⁷ E TIME ¹² V/ / 100 V to 400 V, a loac rent (or its reverse). *3. Resolution Accuracy ¹² Resolution Accuracy Resolution Accuracy ¹³ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵	$ \begin{array}{c} \pm 0.2\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0 \text{ to lass} \\ 1 \text{ Vrms} / 2 \text{ Vrms} (TYP) \\ 1, rated output. *2. For an output voltage of 100 V to 20 on the rear panel. 3. For 5 Hz to 1 MHz components in FIO. OUTPUT VOLTAGE RESPONSE TIME, EF \\ \leq 0.2\% @50/60 Hz, \leq 0.3\% @<500 Hz, \leq 0.5' 100 us (TYP) \\ 80\% \text{ or more} \\ d \text{ power factor of 1, and in AC mode. *2. For an output For AC mode, at an output voltage of 100 V / 200 V, maximum for AC mode, at an output voltage of 100 V / 200 V, maximum for 45 Hz to 65 Hz and DC: \pm (0.5\% \text{ of reading} + 0.1 \text{ A/O.05 A}); For all other frequencies:\pm (0.7\% \text{ of reading} + 0.2 \text{ A/O.1 A}) \\ \text{ For 45 Hz to 65 Hz and DC: \pm (12\% \text{ of reading} + 0.5 \text{ A/O.25 A}) \\ 1 W \\ \pm (2\% \text{ of reading} + 2 W) \\ 1 \text{ VA} \\ \pm (2\% \text{ of reading} + 2 \text{ VA}) \\ \end{array}$	I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @ 500.1 Hz-999.9 Hz voltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1. ling + 0.5 V/1 V); For all other frequencies: : ng] + 1 V / 2 V) 0.01 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) 0.1 A For 45 Hz to 65 Hz and DC:±(12 % of reading] + 0.8 A/0.4 A) 1 W ±(2 % of reading + 3 W) 1 VA ±(2 % of reading + 3 VA)	e change from an output current of 0 A to el. h respect to stepwise change from an output ±(0.7 % of reading + 1 V / 2 V) 0.01 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 0.1 A For 45 Hz to 65 Hz and DC:±(2 % of reading + 1 A/0.5 A) 1 W ±(2 % of reading + 4 W) 1 VA ±(2 % of reading + 4 VA)			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹³ LOAD REGULATION ¹² RIPPLE NOISE ¹³ ^{e1} . Power source input voltage is 200 maximum current(or its reverse), 1 OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONS EFFICIENCY ¹³ ^{e1} . At an output voltage of 50 V to 200 current of 0 A to the maximum cur MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ¹¹ PEAK Value CURRENT RMS, AVG Value PEAK Value PEAK Value POWER Active (W) Apparent (VA) Reactive (VAR)	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ¹¹ E TIME ¹² OV / 100 V to 400 V, a loac rent (or its reverse). *3. Resolution Accuracy ¹² Resolution Accuracy Resolution Accuracy ¹³ Resolution Accuracy ¹⁴ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵		 I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis DC mode using the output terminal on the rear pan FICIENCY % @ 500.1Hz-999.9Hz woltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1. ling + 0.5 V/1 V); For all other frequencies:: : ng] + 1 V / 2 V) 0.01 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) 0.1 A For 45 Hz to 65 Hz and DC:±(12 % of reading] + 0.8 A/0.4 A) 1 W ±(2 % of reading + 3 W) 1 VA ±(2 % of reading + 3 VA) 1 VA ±(2 % of reading + 3 VA) 1 VA ±(2 % of reading + 3 VAR) 0.000 to 1.000 	te change from an output current of 0 A to el. h respect to stepwise change from an output $\pm (0.7 \% \text{ of reading} + 1 V / 2 V)$ 0.01 A For 45 Hz to 65 Hz and DC: $\pm (0.5 \% \text{ of}$ reading+0.2 A/0.1 A); For all other frequencies: $\pm (0.7 \% \text{ of reading}+0.4 A/0.2 A$ 0.1 A For 45 Hz to 65 Hz and DC: $\pm (2 \% \text{ of}$ reading + 1 A/0.5 A) 1 W $\pm (2 \% \text{ of reading} + 4 W)$ 1 VA $\pm (2 \% \text{ of reading} + 4 VA)$ 1 VA $\pm (2 \% \text{ of reading} + 4 VA)$ 1 VAR $\pm (2 \% \text{ of reading} + 4 VAR)$ 0.000 to 1.000			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹¹ LOAD REGULATION ¹² RIPPLE NOISE ¹³ ¹¹ . Power source input voltage is 200 maximum current(or its reverse), 1 OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONS EFFICIENCY ²³ ¹² . At an output voltage of 50 V to 200 current of 0 A to the maximum cur MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ¹¹ PEAK Value CURRENT RMS, AVG Value PEAK Value POWER Active (W) Apparent (VA) Reactive (VAR)	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ⁴¹ E TIME ⁴² OV / 100 V to 400 V, a loac rent (or its reverse). *3. Resolution Accuracy ¹² Resolution Accuracy ¹³ Resolution Accuracy ¹⁴ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵⁷ Resolution Accuracy ¹⁵⁷ Resolution Accuracy ¹⁵⁷ Resolution	$ \begin{array}{c} \pm 0.2\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0 \text{ to less} \\ 1 \text{ Vrms } / 2 \text{ Vrms } (\text{TYP}) \\ 1 \text{ vrms } / 2 \text{ Vrms } (\text{TYP}) \\ 1 \text{ vrms } / 2 \text{ Vrms } (\text{TYP}) \\ 1 \text{ vrms } / 2 \text{ Vrms } (\text{TYP}) \\ 1 \text{ vare output voltage of 100 V to 20 \\ 0 \text{ othe rear panel.} \\ 3. \text{ For 5 Hz to 1 MHz components in } \\ \hline \textbf{rod, OUTPUT VOLTAGE RESPONSE TIME, EF} \\ \hline \leq 0.2\% \\ 0.5\% \\ 0 \text{ or more} \\ 0 \text{ ower factor of 1, and in AC mode. *2. For an output \\ \text{For AC mode, at an output voltage of 100 V / 200 V, max} \\ \hline \textbf{rot AC mode, at an output voltage of 100 V / 200 V, max} \\ \hline \textbf{rot AC mode, at an output voltage of 100 V / 200 V, max} \\ \hline \textbf{rot AS Hz to 65 Hz and DC: } \pm (0.5\% \text{ of reading} + 0.1 \text{ A/} \text{ oot } 3\text{ /} \text{ For } 45 \text{ Hz to 65 Hz and DC: } \pm (0.5\% \text{ of reading} + 0.1 \text{ A/} \text{ oot } 3\text{ /} \text{ For } 45 \text{ Hz to 65 Hz and DC: } \pm (0.5\% \text{ of reading} + 0.1 \text{ A/} \text{ oot } 3\text{ /} \text{ For } 45 \text{ Hz to 65 Hz and DC: } \pm (0.2\% \text{ of reading} + 0.5 \text{ A/} \text{ oot } 3\text{ /} \text{ of reading} + 0.5 \text{ A/} \text{ oot } 3\text{ of reading} + 0.2 \text{ A/} \text{ oot } 1\text{ A/} \text{ oot } 3\text{ of reading} + 0.5 \text{ A/} \text{ oot } 3\text{ of reading} + 0.5 \text{ A/} \text{ oot } 3\text{ of reading} + 2 \text{ VA}) \\ 1 \text{ VA} \\ \pm (2\% \text{ of reading} + 2 \text{ VA}) \\1 \text{ VAR} \\ \pm (2\% \text{ of reading} + 2 \text{ VAR}) \\0.000 \text{ to } 1.000 \\0.001 \\ \hline \end{array}$	I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @ 500.1Hz-999.9Hz voltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1. ling + 0.5 V/1 V); For all other frequencies: : ng + 1 V / 2 V) 0.01 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) 0.1 A For 45 Hz to 65 Hz and DC:±(12 % of reading + 0.8 A/0.4 A) 1 W ±(2 % of reading + 3 W) 1 VA ±(2 % of reading + 3 VA) 1 VAR ±(2 % of reading + 3 VAR) 0.000 to 1.000 0.001	e change from an output current of 0 A to el. h respect to stepwise change from an output ±(0.7 % of reading + 1 V / 2 V) 0.01 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 0.1 A For 45 Hz to 65 Hz and DC:±(12 % of reading + 1 A/0.5 A) 1 W ±(2 % of reading + 4 W) 1 VA ±(2 % of reading + 4 VA) 1 VA ±(2 % of reading + 4 VA) 0.000 to 1.000 0.001			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹¹ LOAD REGULATION ¹² RIPPLE NOISE ¹³ ¹¹ . Power source input voltage is 200 maximum current(or its reverse), 1 OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONS EFFICIENCY ²³ ¹² . At an output voltage of 50 V to 200 current of 0 A to the maximum cur MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ¹¹ PEAK Value CURRENT RMS, AVG Value PEAK Value POWER Active (W) Apparent (VA) Reactive (VAR)	V. 220 V. or 240 V. no load using the output terminal M DISTORTION RAT N(THD) ¹⁷ E TIME ¹² DV / 100 V to 400 V, a loac rrent (or its reverse). *3. Resolution Accuracy ¹² Resolution Accuracy ¹³ Resolution Accuracy ¹³ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵⁷⁶ Resolution Accuracy ¹⁵⁷⁶ Resolution Accuracy ¹⁵⁷⁷ Range Resolution Range	$ \begin{array}{c} \pm 0.2\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0 \text{ to long, via output terminal} \\ 1 \text{ Vrms } / 2 \text{ Vrms (TYP)} \\ 1 \text{ rated output. *2. For an output voltage of 100 V to 20 on the rear panel. 3. For 5 Hz to 1 MHz components in FIO. OUTPUT VOLTAGE RESPONSE TIME, EF \\ &\leq 0.2\% @50/60 \text{Hz}, \leq 0.3\% @<500 \text{Hz}, \leq 0.5^{\circ} 100 \text{ us (TYP)} \\ 80\% \text{ or more} \\ 1 \text{ gower factor of 1, and in AC mode. *2. For an output For AC mode, at an output voltage of 100 V / 200 V, max \\ For 45 Hz to 65 Hz and DC: \pm (0.5\% \text{ of reading} - 0.1 \text{ V} \text{ For 45 Hz to 65 Hz and DC: } \pm (0.2\% \text{ of reading} + 0.1 \text{ A}/0.05 \text{ A}); For all other frequencies: \pm (0.7\% \text{ of reading} + 0.2 \text{ A}/0.1 \text{ A} \text{ For 45 Hz to 65 Hz and DC: } \pm (12\% \text{ of reading} + 0.5 \text{ A}/0.25 \text{ A}) \text{ 1 W} \\ \pm (2\% \text{ of reading} + 2 \text{ W}) \text{ 1 VA} \\ \pm (2\% \text{ of reading} + 2 \text{ VA}) \text{ 1 VAR} \\ \pm (2\% \text{ of reading} + 2 \text{ VAR}) \\ 0.000 \text{ to 1.000} \\ 0.001 \text{ 0.000 to 50.00} \end{array}$	I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @ 500.1 Hz-999.9 Hz voltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1. Iling + 0.5 V/1 V); For all other frequencies: : ng] + 1 V / 2 V) 0.01 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) 0.1 A For 45 Hz to 65 Hz and DC:±(12 % of reading] + 0.8 A/0.4 A) 1 W ±(2 % of reading + 3 W) 1 VA ±(2 % of reading + 3 VA) 1 VA ±(2 % of reading + 3 VA) 0.000 to 1.000 0.001 0.00 to 50.00	e change from an output current of 0 A to el. h respect to stepwise change from an output ±(0.7 % of reading + 1 V / 2 V) 0.01 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 0.1 A For 45 Hz to 65 Hz and DC:±(12 % of reading] + 1 A/0.5 A) 1 W ±(2 % of reading + 4 W) 1 VA ±(2 % of reading + 4 VA) 1 VA ±(2 % of reading + 4 VA) 1 VA ±(2 % of reading + 4 VA) 0.000 to 1.000 0.001 0.00 to 50.00			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹³ LOAD REGULATION ¹² RIPPLE NOISE ¹³ ¹¹ . Power source input voltage is 200 maximum current(or its reverse), 1 OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONS EFFICIENCY ¹³ ¹³ . At an output voltage of 50 V to 200 current of 0 A to the maximum cur MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ¹¹ PEAK Value CURRENT RMS, AVG Value ¹¹ PEAK Value PEAK Value POWER Active (W) Apparent (VA) Reactive (VAR) LOAD POWER FACTOR	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ¹¹ E TIME ¹² DV / 100 V to 400 V, a loac rrent (or its reverse). *3. Resolution Accuracy ¹² Resolution Accuracy Resolution Accuracy ¹³ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵⁵ Resolution Accuracy ¹⁵⁷⁵ Resolution Accuracy ¹⁵⁷⁵ Resolution Accuracy ¹⁵⁷⁵ Resolution Accuracy ¹⁵⁷⁵ Resolution Accuracy ¹⁵⁷⁷ Range Resolution Range Resolution	$ \begin{array}{c} \pm 0.2\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0 \text{ torms} (TYP) \\ 1, rated output. *2. For an output voltage of 100 V to 20 \\ 0 \text{ on the rear panel. } 3. For 5 Hz to 1 MHz components in \\ \hline \textbf{IO, OUTPUT VOLTAGE RESPONSE TIME, EF} \\ &\leq 0.2\% @50/60 \text{Hz}, \leq 0.3\% @<500 \text{Hz}, \leq 0.5\% \\ 100 \text{ us} (TYP) \\ 80\% \text{ or more} \\ d \text{ power factor of 1, and in AC mode. *2. For an output \\ For AC mode, at an output voltage of 100 V / 200 V, max \\ \hline \textbf{O.1 V} \\ For 45 \text{ Hz to 65 Hz and DC: } \pm (0.5\% \text{ of read} \\ 0.1 \text{ V} \\ For 45 \text{ Hz to 65 Hz and DC: } \pm (12\% \text{ of read} \\ 0.01 \text{ A} \\ For 45 \text{ Hz to 65 Hz and DC: } \pm (12\% \text{ of read} \\ 0.01 \text{ A} \\ For 45 \text{ Hz to 65 Hz and DC: } \pm (12\% \text{ of read} \\ 10.01 \text{ A} \\ For 45 \text{ Hz to 65 Hz and DC: } \pm (12\% \text{ of read} \\ 10.01 \text{ A} \\ For 45 \text{ Hz to 65 Hz and DC: } \pm (12\% \text{ of read} \\ 10.01 \text{ A} \\ For 45 \text{ Hz to 65 Hz and DC: } \pm (12\% \text{ of read} \\ 10.01 \text{ A} \\ For 45 \text{ Hz to 65 Hz and DC: } \pm (12\% \text{ of read} \\ 10.01 \text{ A} \\ For 45 \text{ Hz to 65 Hz and DC: } \pm (12\% \text{ of read} \\ 10.1 \text{ A} \\ 10.1 \text{ A} \\ For 45 \text{ Hz to 65 Hz and DC: } \pm (12\% \text{ of read} \\ 12\% \text{ of read} \\ 10.2\% \text{ of read} \\ 10.000 \text{ to 1.000} \\ 0.001 \\ 0.001 \text{ to 50.00} \\ 0.01 \end{array}$	 I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @ 500.1Hz-999.9Hz woltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1. ling + 0.5 V/1 V); For all other frequencies:: : ng] + 1 V / 2 V) 0.01 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) 0.1 A For 45 Hz to 65 Hz and DC:±(2 % of reading + 0.8 A/0.4 A) 1 W ±(2 % of reading + 3 W) 1 VA ±(2 % of reading + 3 VA) 1 VAR ±(2 % of reading + 3 VAR) 0.000 to 1.000 0.001 0.00 to 50.00 0.01 	e change from an output current of 0 A to el. h respect to stepwise change from an output $\pm (0.7 \% \text{ of reading} + 1 V / 2 V)$ 0.01 A For 45 Hz to 65 Hz and DC: $\pm (0.5 \% \text{ of}$ reading+0.2 A/0.1 A); For all other frequencies: $\pm (0.7 \% \text{ of reading}+0.4 A/0.2 H)$ 0.1 A For 45 Hz to 65 Hz and DC: $\pm (2 \% \text{ of}$ reading + 1 A/0.5 A) 1 W $\pm (2 \% \text{ of reading} + 4 W)$ 1 VA $\pm (2 \% \text{ of reading} + 4 VA)$ 1 VA $\pm (2 \% \text{ of reading} + 4 VAR)$ 0.000 to 1.000 0.001 0.00 to 50.00 0.01			
DUTPUT VOLTAGE STABILITY LINE REGULATION ¹⁷ LOAD REGULATION ¹⁷ RIPPLE NOISE ¹³ 1. Power source input voltage is 200 maximum current(or its reverse), 1 DUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTION DUTPUT VOLTAGE RESPONS EFFICIENCY ¹³ 1. At an output voltage of 50 V to 200 current of 0 A to the maximum cur MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ¹¹ PEAK Value CURRENT RMS, AVG Value PEAK Value PEAK Value PEAK Value PEAK Value PEAK Value CURRENT RMS, AVG Value PEAK Value PEAK Value CURRENT RMS, AVG Value PEAK Value CURRENT RMS, AVG Value PEAK Value CURRENT RMS, AVG Value PEAK Value PEAK Value CURRENT RMS, AVG Value PEAK VALUE POWER Active (W) Apparent (VA) Reactive (VAR) LOAD POWER FACTOR HARMONIC VOLTAGE	V. 220 V. or 240 V. no load using the output terminal M DISTORTION RAT N(THD) ¹⁷ E TIME ¹² DV / 100 V to 400 V, a loac rrent (or its reverse). *3. Resolution Accuracy ¹² Resolution Accuracy ¹³ Resolution Accuracy ¹³ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵⁷⁶ Resolution Accuracy ¹⁵⁷⁶ Resolution Accuracy ¹⁵⁷⁷ Range Resolution Range	$ \begin{array}{c} \pm 0.2\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0 \text{ to long, via output terminal} \\ 1 \text{ Vrms } / 2 \text{ Vrms (TYP)} \\ 1 \text{ rated output. *2. For an output voltage of 100 V to 20 on the rear panel. 3. For 5 Hz to 1 MHz components in FIO. OUTPUT VOLTAGE RESPONSE TIME, EF \\ &\leq 0.2\% @50/60 \text{Hz}, \leq 0.3\% @<500 \text{Hz}, \leq 0.5^{\circ} 100 \text{ us (TYP)} \\ 80\% \text{ or more} \\ 1 \text{ gower factor of 1, and in AC mode. *2. For an output For AC mode, at an output voltage of 100 V / 200 V, max \\ For 45 Hz to 65 Hz and DC: \pm (0.5\% \text{ of reading} - 0.1 \text{ V} \text{ For 45 Hz to 65 Hz and DC: } \pm (0.2\% \text{ of reading} + 0.1 \text{ A}/0.05 \text{ A}); For all other frequencies: \pm (0.7\% \text{ of reading} + 0.2 \text{ A}/0.1 \text{ A} \text{ For 45 Hz to 65 Hz and DC: } \pm (12\% \text{ of reading} + 0.5 \text{ A}/0.25 \text{ A}) \text{ 1 W} \\ \pm (2\% \text{ of reading} + 2 \text{ W}) \text{ 1 VA} \\ \pm (2\% \text{ of reading} + 2 \text{ VA}) \text{ 1 VAR} \\ \pm (2\% \text{ of reading} + 2 \text{ VAR}) \\ 0.000 \text{ to 1.000} \\ 0.001 \text{ 0.000 to 50.00} \end{array}$	 I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis DC mode using the output terminal on the rear pan FICIENCY % @ 500.1 Hz-999.9 Hz woltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1. ling + 0.5 V/1 V); For all other frequencies:: ng + 1 V / 2 V) 0.01 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) 0.1 A For 45 Hz to 65 Hz and DC:±(12 % of reading + 0.8 A/0.4 A) 1 W ±(2 % of reading + 3 W) 1 VA ±(2 % of reading + 3 VA) 1 VAR ±(2 % of reading + 3 VAR) 0.000 to 1.000 0.001 0.00 to 50.00 0.01 Up to 40th order of the fundamental wave 	e change from an output current of 0 A to el. h respect to stepwise change from an output $\pm (0.7 \% \text{ of reading} + 1 V / 2 V)$ 0.01 A For 45 Hz to 65 Hz and DC: $\pm (0.5 \% \text{ of reading}+0.2 A/0.1 A); For all other frequencies:\pm (0.7 \% \text{ of reading}+0.4 A/0.2 I)0.1 AFor 45 Hz to 65 Hz and DC:\pm (2 \% \text{ of reading} + 1 A/0.5 A)1 W\pm (2 \% \text{ of reading} + 4 W)1 VA\pm (2 \% \text{ of reading} + 4 VA)1 VA\pm (2 \% \text{ of reading} + 4 VAR)0.000 to 1.0000.0010.00 to 50.000.01$			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹¹ LOAD REGULATION ¹² RIPPLE NOISE ¹³ ¹¹ . Power source input voltage is 200 maximum current(or its reverse), 1 OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONS EFFICIENCY ²³ ¹³ . At an output voltage of 50 V to 200 current of 0 A to the maximum cur MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ¹¹ PEAK Value CURRENT RMS, AVG Value ¹¹ PEAK Value POWER Active (W) Apparent (VA) Reactive (VAR) LOAD POWER FACTOR HARMONIC VOLTAGE EFFECTIVE VALUE (RMS)	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ^{*1} E TIME ^{*2} DV / 100 V to 400 V, a loac rent (or its reverse). *3. Resolution Accuracy ^{*2} Resolution Accuracy ^{*3} Resolution Accuracy ^{*3} Resolution Accuracy ^{*5} Resolution Accuracy ^{*5} Resolution Accuracy ^{*5*} Resolution Accuracy ^{*5*} Resolution Accuracy ^{*5*} Resolution Range Resolution Range Resolution Range	$ \begin{array}{l} \pm 0.2\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0 \text{ to 100\%, via output termina} \\ 1 \text{ Vrms } 1 \text{ Z Vrms } [TP) \\ 1, rated output. *2. For an output voltage of 100 V to 20 \\ on the rear panel. *3. For 5 Hz to 1 MHz components in \\ \hline \textbf{rot, OUTPUT VOLTAGE RESPONSE TIME, EF} \\ & \leq 0.2\% @50/60 \text{Hz}, \leq 0.3\% @ <500 \text{Hz}, \leq 0.5' \\ 100 \text{ us } (TYP) \\ & 80\% \text{ or more} \\ \hline d \text{ power factor of 1, and in AC mode. *2. For an output } \\ \hline \text{For AC mode, at an output voltage of 100 V / 200 V, max} \\ \hline \textbf{0.1 V} \\ & \text{For 45 Hz to 65 Hz and DC: } \pm (0.5\% \text{ of read} 0.1 \text{ V} \\ & \text{For 45 Hz to 65 Hz and DC: } \pm (0.5\% \text{ of read} 0.1 \text{ V} \\ & \text{For 45 Hz to 65 Hz and DC: } \pm (0.5\% \text{ of reading} + 0.1 \text{ A}(0.05 \text{ A}); \text{ For all other} \\ & \text{frequencies} \pm (0.7\% \text{ of reading} + 0.2 \text{ A}(0.1 \text{ A}) \\ & \textbf{0.1 A} \\ & \text{For 45 Hz to 65 Hz and DC: } \pm (12\% \text{ of reading} + 0.5 \text{ A}(0.25 \text{ A}) \\ & \textbf{1 W} \\ & \pm (2\% \text{ of reading} + 2 \text{ W}) \\ & \textbf{1 W} \\ & \pm (2\% \text{ of reading} + 2 \text{ VA}) \\ & \textbf{1 VA} \\ & \pm (2\% \text{ of reading} + 2 \text{ VAR}) \\ & \textbf{0.000 to 1.000} \\ & \textbf{0.001} \\ & \textbf{0.00 to 50.00} \\ & \textbf{0.01} \\ & \text{Up to 40th order of the fundamental wave} \end{array}$	 I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @ 500.1Hz-999.9Hz woltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1. ling + 0.5 V/1 V); For all other frequencies:: : ng] + 1 V / 2 V) 0.01 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) 0.1 A For 45 Hz to 65 Hz and DC:±(2 % of reading + 0.8 A/0.4 A) 1 W ±(2 % of reading + 3 W) 1 VA ±(2 % of reading + 3 VA) 1 VAR ±(2 % of reading + 3 VAR) 0.000 to 1.000 0.001 0.00 to 50.00 0.01 	e change from an output current of 0 A to el. h respect to stepwise change from an output ±(0.7 % of reading + 1 V / 2 V) 0.01 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 / 0.1 A For 45 Hz to 65 Hz and DC:±(2 % of reading + 1 A/0.5 A) 1 W ±(2 % of reading + 4 W) 1 VA ±(2 % of reading + 4 VA) 1 VA ±(2 % of reading + 4 VA) 1 VA ±(2 % of reading + 4 VA) 0.000 to 1.000 0.001 0.00 to 50.00 0.01 Up to 40th order of the fundamental wave			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹¹ LOAD REGULATION ¹² RIPPLE NOISE ¹³ ¹¹ . Power source input voltage is 200 maximum current(or its reverse), 1 OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONS EFFICIENCY ²³ ¹³ At an output voltage of 50 V to 200 current of 0 A to the maximum cur MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ¹¹ PEAK Value CURRENT RMS, AVG Value ¹¹ PEAK Value POWER Active (W) Apparent (VA) Reactive (VAR) LOAD POWER FACTOR LOAD CREST FACTOR HARMONIC VOLTAGE EFFECTIVE VALUE (RMS) PERCENT (%)	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ⁴¹ E TIME ⁵² DV / 100 V to 400 V, a loac rent (or its reverse). *3. Resolution Accuracy ⁷² Resolution Accuracy Resolution Accuracy ⁵³ Resolution Accuracy ⁵³ Resolution Accuracy ⁵³ Resolution Accuracy ⁵³ Resolution Accuracy ⁵³ Resolution Accuracy ⁵³ Resolution Accuracy ⁵³ Resolution Range Resolution Range Resolution Range Full Scale	$ \begin{array}{c} \pm 0.2\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0 \text{ to there are panel.} \\ 1 \text{ Vrms } / 2 \text{ Vrms } (TYP) \\ 1, rated output. *2. For an output voltage of 100 V to 20 on the rear panel. 3. For 5 Hz to 1 MHz components in FIO. OUTPUT VOLTAGE RESPONSE TIME, EF \\ \leq 0.2\% @50/60 \text{Hz}, \leq 0.3\% @<500 \text{Hz}, \leq 0.5\% \\ 100 \text{ us } (TYP) \\ 80\% \text{ or more} \\ d \text{ power factor of 1, and in AC mode. *2. For an output For AC mode, at an output voltage of 100 V / 200 V, max \\ for 45 \text{ Hz to 65 Hz and DC: } \pm (0.5\% \text{ of read} 0.1 V \\ For 45 \text{ Hz to 65 Hz and DC: } \pm (12\% \text{ of reading} + 0.1 \text{ A}/0.05 \text{ A}); For all other \\ frequencies: \pm (0.7\% \text{ of reading} + 0.2 \text{ A}/0.1 \text{ A}) \\ 0.1 \text{ A} \\ For 45 \text{ Hz to 65 Hz and DC: } \pm (12\% \text{ of } reading + 0.1 \text{ A}/0.05 \text{ A}); For all other \\ frequencies: \pm (0.7\% \text{ of reading} + 0.2 \text{ A}/0.1 \text{ A}) \\ 0.1 \text{ A} \\ For 45 \text{ Hz to 65 Hz and DC: } \pm (12\% \text{ of } reading + 0.1 \text{ A}/0.05 \text{ A}); For all other \\ frequencies: \pm (0.7\% \text{ of reading} + 0.2 \text{ A}/0.1 \text{ A}) \\ 0.1 \text{ A} \\ For 45 \text{ Hz to 65 Hz and DC: } \pm (12\% \text{ of } reading + 0.5 \text{ A}/0.25 \text{ A}) \\ 1 \text{ W} \\ \pm (2\% \text{ of reading} + 2 \text{ W}) \\ 1 \text{ VA} \\ \pm (2\% \text{ of reading} + 2 \text{ VAR}) \\ 0.000 \text{ to 1.000} \\ 0.001 \\ 0.001 \\ 0.001 \\ 0.001 \\ 0.004 \\ 0.1\% \\ Up \text{ to 40th order of the fundamental wave } \\ 200 \text{ V / 400 V, 100\% } \\ 0.1 \text{ V}, 0.1\% \\ Up \text{ to 20th} \pm (0.2\% \text{ of reading} + 0.5 \text{ V/1 V}); \end{cases}$	I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @ 500.1Hz-999.9Hz voltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1. ling + 0.5 V/1 V); For all other frequencies: : ng] + 1 V / 2 V) 0.01 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) 0.1 A For 45 Hz to 65 Hz and DC:±(12 % of reading] + 0.8 A/0.4 A) 1 W ±(2 % of reading + 3 W) 1 VA ±(2 % of reading + 3 VA) 1 VA ±(2 % of reading + 3 VA) 1 VA ±(2 % of reading + 3 VAR) 0.000 to 50.00 0.01 Up to 40th order of the fundamental wave 200 V / 400 V, 100% 0.1 V, 0.1% Up to 20th±(0.2 % of reading+0.5 V/1 V);	e change from an output current of 0 A to el. h respect to stepwise change from an output ±(0.7 % of reading + 1 V / 2 V) 0.01 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 / 0.1 A For 45 Hz to 65 Hz and DC:±(12 % of reading] + 1 A/0.5 A) 1 W ±(2 % of reading + 4 W) 1 VA ±(2 % of reading + 4 VA) 1 VAR ±(2 % of reading + 4 VA) 1 VAR ±(2 % of reading + 4 VAR) 0.000 to 1.000 0.001 0.001 to 50.00 0.01 Up to 40th order of the fundamental way 200 V / 400 V, 100% 0.1 V, 0.1% Up to 20th±(0.2 % of reading+0.5 V/1 V)			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹³ LOAD REGULATION ¹² RIPPLE NOISE ¹³ ^{e1} . Power source input voltage is 200 maximum current(or its reverse), 1 OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONS EFFICIENCY ¹³ ^{e1} . At an output voltage of 50 V to 200 current of 0 A to the maximum cur MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ¹¹ PEAK Value CURRENT RMS, AVG Value ²¹ PEAK Value PEAK Value POWER Active (W) Apparent (VA) Reactive (VAR) LOAD POWER FACTOR HARMONIC VOLTAGE EFFECTIVE VALUE (RMS) PERCENT (%) (AC-INT and 50/60 Hz only)	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ¹¹ E TIME ¹² DV / 100 V to 400 V, a loac rrent (or its reverse). *3. Resolution Accuracy ¹² Resolution Accuracy Resolution Accuracy ¹³ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵¹⁵ Resolution Accuracy ¹⁵¹⁵ Resolution Range Resolution Range Resolution Range Resolution Range Resolution Range Resolution Range Resolution Range Resolution Range Resolution Range Resolution Range Resolution Range Resolution Range Resolution Range Resolution Range Resolution Range	$ \begin{array}{l} \pm 0.2\% \text{ or less} \\ 0.5\% \text{ or less} \\ 1 \text{ Vrms } 1 \text{ 2 Vrms } (\text{TP}) \\ 1, \text{ rated output. *2. For an output voltage of 100 V to 20 \\ 0 \text{ on the rear panel. } 3. \text{ For 5 Hz to 1 MHz components in } \\ \hline \text{IO, OUTPUT VOLTAGE RESPONSE TIME, EF} \\ & \leq 0.2\% \\ \oplus 50/60\text{ Hz}, \\ \leq 0.3\% \\ \oplus \text{ or more} \\ \hline \text{do wer factor of 1, and in AC mode. *2. For an output \\ \text{For 45 Hz to 65 Hz and DC: } \\ \pm (0.5\% \text{ of read} \\ 0.1 \text{ V} \\ \text{ For 45 Hz to 65 Hz and DC: } \\ \pm (0.5\% \text{ of read} \\ 0.1 \text{ V} \\ \text{ For 45 Hz to 65 Hz and DC: } \\ \pm (0.5\% \text{ of read} \\ 0.1 \text{ V} \\ \text{ For 45 Hz to 65 Hz and DC: } \\ \pm (0.5\% \text{ of read} \\ 0.1 \text{ A} \\ \text{ For 45 Hz to 65 Hz and DC: } \\ \pm (0.5\% \text{ of read} \\ 0.01 \text{ A} \\ \text{ For 45 Hz to 65 Hz and DC: } \\ \ \text{fer 45 Hz to 65 Hz and DC: } \\ \ \text{fer 45 Hz to 65 Hz and DC: } \\ \ \text{fer 45 Hz to 65 Hz and DC: } \\ \ \text{fer 45 Hz to 65 Hz and DC: } \\ \ \text{fer 45 Hz to 65 Hz and DC: } \\ \ \text{fer 45 Hz to 65 Hz and DC: } \\ \ \text{for 45 Hz to 65 Hz and DC: } \\ \ \text{fer 45 Hz to 65 Hz and DC: } \\ \ \text{for 45 Hz to 65 Hz and DC: } \\ \ \text{for 45 Hz to 65 Hz and DC: } \\ \ \text{for 45 Hz to 65 Hz and DC: } \\ \ \text{for 45 Hz to 65 Hz and DC: } \\ \ \text{for 45 Hz to 65 Hz and DC: } \\ \ \text{for 45 Hz to 65 Hz and DC: } \\ \ \text{for 45 Hz to 65 Hz and DC: } \\ \ \text{for 45 Hz to 65 Hz and DC: } \\ \ \text{for 45 Hz to 65 Hz and DC: } \\ \ \text{for 45 Hz to 65 Hz and DC: } \\ \ \text{for 45 Hz to 65 Hz and DC: } \\ \ \text{for 45 Hz to 65 Hz and DC: } \\ \ \text{for 45 Hz to 65 Hz and DC: } \\ \ \text{for a 10, 0.1 A } \\ \ \text{for 45 Hz to 65 Hz and DC: } \\ \ \text{for 6 reading} + 2 \text{ W} \\ \ \text{1 VA } \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	I) $0 \vee / 200 \lor to 400 \lor, a load power factor of 1, stepwis IDC mode using the output terminal on the rear pan FICIENCY % @ 500.1Hz-999.9Hz woltage of 100 \lor / 200 \lor, a load power factor of 1, with imum current, and load power factor of 1. with the second se$	e change from an output current of 0 A to el. h respect to stepwise change from an output ±(0.7 % of reading + 1 V / 2 V) 0.01 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 / 0.1 A For 45 Hz to 65 Hz and DC:±(12 % of reading + 1 A/0.5 A) 1 W ±(2 % of reading + 4 W) 1 VA ±(2 % of reading + 4 VA) 1 VA ±(2 % of reading + 4 VA) 1 VA ±(2 % of reading + 4 VA) 0.000 to 1.000 0.001 0.00 to 50.00 0.01 Up to 40th order of the fundamental way 200 V / 400 V, 100% 0.1 V, 0.1% Up to 20th=(0.2 % of reading+0.5 V/1 V) 20th to 40th±(0.3 % of reading+0.5 V/1 V) 20th to 40th±(0.3 % of reading+0.5 V/1 V)			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹³ LOAD REGULATION ¹² RIPPLE NOISE ¹³ ¹¹ . Power source input voltage is 200 maximum current(or its reverse), 1 OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONS EFFICIENCY ¹³ ¹² . At an output voltage of 50 V to 200 current of 0 A to the maximum cur MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ¹¹ PEAK Value CURRENT RMS, AVG Value ¹¹ PEAK Value PEAK Value POWER Active (W) Apparent (VA) Reactive (VAR) LOAD POWER FACTOR HARMONIC VOLTAGE EFFECTIVE VALUE (RMS) PERCENT (%) (AC-INT and 50/60 Hz only) HARMONIC CURRENT	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ¹¹ E TIME ¹² DV / 100 V to 400 V, a loac rent (or its reverse). *3. Resolution Accuracy ¹² Resolution Accuracy ¹³ Resolution Accuracy ¹³ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution Accuracy ¹⁵ Resolution Range Resolution Range Resolution Range Full Scale Resolution Accuracy ¹⁵ Resolution Range Resolution Range Resolution Range Resolution Range Resolution Range Resolution Range Resolution Range Resolution Range Resolution Range Resolution Range	$ \begin{array}{l} \pm 0.2\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0 \text{ to trans} \\ 1 \text{ Vrms} / 2 \text{ Vrms} (TP) \\ 1, rated output. *2. For an output voltage of 100 V to 20 \\ 0 \text{ on the rear panel. } 3. For 5 Hz to 1 MHz components in \\ \hline \textbf{IO, OUTPUT VOLTAGE RESPONSE TIME, EF} \\ & \leq 0.2\% \\ @ 50/60 \text{ Hz}, \\ \leq 0.3\% \\ @ \text{ components} \\ \hline \textbf{IO}, \textbf{OUTPUT VOLTAGE RESPONSE TIME, EF} \\ & \leq 0.2\% \\ @ 50/60 \text{ Hz}, \\ \leq 0.3\% \\ @ \text{ components} \\ \hline \textbf{IO}, \textbf{OUTPUT VOLTAGE RESPONSE TIME, EF} \\ & \leq 0.2\% \\ @ 50/60 \text{ Hz}, \\ \leq 0.3\% \\ @ \text{ components} \\ \hline \textbf{IO}, \textbf{OUTPUT VOLTAGE RESPONSE TIME, EF} \\ & \leq 0.2\% \\ @ 50/60 \text{ Hz}, \\ \leq 0.3\% \\ @ \text{ components} \\ \hline \textbf{IO}, \textbf{OUTPUT VOLTAGE RESPONSE TIME, EF} \\ & \leq 0.2\% \\ @ 50/60 \text{ Hz}, \\ \leq 0.3\% \\ @ \text{ example factor of 1, and in AC mode. *2. For an output } \\ For 45 \text{ Hz to 65 Hz and DC: } \\ \pm (0.5\% \text{ of read} \text{ or up two voltage of 100 V / 200 V, max} \\ \hline \textbf{O.1 V} \\ For 45 \text{ Hz to 65 Hz and DC: } \\ & \text{ for 45 Hz to 65 Hz and DC: } \\ \hline \textbf{IO}, \textbf{IA} \\ For 45 \text{ Hz to 65 Hz and DC: } \\ \hline \textbf{IO}, \textbf{IA} \\ For 45 \text{ Hz to 65 Hz and DC: } \\ \hline \textbf{IO}, \textbf{IA} \\ For 45 \text{ Hz to 65 Hz and DC: } \\ \ \textbf{IO}, \textbf{IA} \\ \hline \textbf{IO}, \textbf{IA} \\ \hline \textbf{IO}, \textbf{IA} \\ \hline \textbf{IO}, \textbf{IA} \\ \hline \textbf{IVA} \\ \\ \\ \pm (2\% \text{ of reading + 2 W) \\ 1 \text{ VA} \\ \\ \\ \pm (2\% \text{ of reading + 2 VA) \\ 1 \text{ VAR} \\ \\ \\ \\ \pm (2\% \text{ of reading + 2 VAR) \\ 0.000 \text{ to 1.000} \\ 0.001 \\ \hline \textbf{IO}, 000 \text{ to 50.00} \\ 0.01 \\ \hline \textbf{Up to 40th order of the fundamental wave 200 V / 400 V, 100\% \\ 0.1 \text{ V}, 0.1\% \\ \hline Up to 20th \pm (0.2\% \text{ of reading+0.5 V/1 V); 20th to 40th order of the fundamental wave 200 V / 400 \text{ to order of the fundamental wave 200 V / 400 \text{ to order of the fundamental wave 200 V / 400 \text{ to order of the fundamental wave 200 V / 400 \text{ to order of the fundamental wave 200 V / 400 \text{ to order of the fundamental wave 200 V / 400 \text{ to order of the fundamental wave 200 V / 400 \text{ to order of the fundamental wave 200 V / V) \\ \hline \textbf{Up to 40th order of the fundamental wave 200 V \text{ to 00th order of the fundamental wave 200$	 I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @ 500.1Hz-999.9Hz woltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1. with the step of th	e change from an output current of 0 A to el. h respect to stepwise change from an output ±(0.7 % of reading + 1 V / 2 V) 0.01 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 0.1 A For 45 Hz to 65 Hz and DC:±(2 % of reading + 1 A/0.5 A) 1 W ±(2 % of reading + 4 W) 1 VA ±(2 % of reading + 4 VA) 1 VA ±(2 % of reading + 4 VA) 1 VA ±(2 % of reading + 4 VA) 0.000 to 1.000 0.001 0.00 to 50.00 0.01 Up to 40th order of the fundamental wav 200 V / 400 V, 100% 0.1 V, 0.1% Up to 20th±(0.2 % of reading+0.5 V/1 V) 20th to 40th=(0.3 % of reading+0.5 V/1 V) Up to 40th order of the fundamental wav			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹¹ LOAD REGULATION ¹² RIPPLE NOISE ¹³ *1. Power source input voltage is 200 maximum current(or its reverse), 1 OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONS EFFICIENCY ¹³ *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cuu MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ¹¹ PEAK Value CURRENT RMS, AVG Value ¹¹ PEAK Value POWER Active (W) Apparent (VA) Reactive (VAR) LOAD POWER FACTOR LOAD CREST FACTOR HARMONIC VOLTAGE EFFECTIVE VALUE (RMS) PERCENT (%) (AC-INT and 50/60 Hz only) HARMONIC CURRENT EFFECTIVE VALUE (RMS)	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ^{*1} E TIME ^{*2} DV / 100 V to 400 V, a loac rent (or its reverse). *3. Resolution Accuracy ^{*2} Resolution Accuracy ^{*3} Resolution Accuracy ^{*3} Resolution Accuracy ^{*4} Resolution Accuracy ^{*5*6} Resolution Accuracy ^{*3*6} Resolution Range Resolution Range Full Scale Full Scale	$ \begin{array}{c} \pm 0.2\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0 \text{ to 100\%, via output termina} \\ 1 \text{ Vrms } 2 \text{ Vrms (TYP)} \\ 1 \text{ Vrms } 2 \text{ Vrms (TYP)} \\ 1 \text{ vrms } 2 \text{ Vrms (TYP)} \\ 1 \text{ vrms } 2 \text{ vrms (TYP)} \\ 1 \text{ on the rear panel. } 3. \text{ For 5 Hz to 1 MHz components in} \\ \hline \textbf{FO, OUTPUT VOLTAGE RESPONSE TIME, EF} \\ \hline & 0.2\% @50/60\text{Hz}, \leq 0.3\% @<500\text{Hz}, \leq 0.5' \\ 100 \text{ us (TYP)} \\ 80\% \text{ or more} \\ 100 \text{ us (TYP)} \\ 80\% \text{ or more} \\ 100 \text{ wer factor of 1, and in AC mode. *2. For an output For AC mode, at an output voltage of 100 V / 200 V, max \\ \hline \text{For A5 Hz to 65 Hz and DC: } \pm (0.5\% \text{ of reading} + 0.1 \text{ V} \text{ For 45 Hz to 65 Hz and DC: } \pm (0.5\% \text{ of reading} + 0.1 \text{ A/O.5 A}); \text{ For all other frequencies} \pm (0.7\% \text{ of reading} + 0.2 \text{ A/O.1 A} \\ 0.1 \text{ A} \text{ For 45 Hz to 65 Hz and DC: } \pm (12\% \text{ of reading} + 0.5 \text{ A/O.25 A}) \\ 1 \text{ W} \\ \pm (2\% \text{ of reading} + 2 \text{ W}) \\ 1 \text{ VA} \\ \pm (2\% \text{ of reading} + 2 \text{ VA}) \\ 1 \text{ VAR } \\ \pm (2\% \text{ of reading} + 2 \text{ VAR}) \\ 0.000 \text{ to 1.000} \\ 0.001 \\ 0.001 \text{ to 20.00} \\ 0.01 \\ Up to 40\text{th order of the fundamental wave } 200 \text{ V / 400 V, 100\% \\ 0.1 \text{ W} to 40\text{th} \pm (0.2\% \text{ of reading} + 0.5 \text{ V/1 V}); \\ 20\text{ th to 40\text{th} \pm (0.3\% \text{ of reading} + 0.5 \text{ V/1 V}); \\ 20\text{ th to 40\text{th} order of the fundamental wave } 20 \text{ A / 10 A, 100\% \\ 20 \text{ A / 10 A, 100\% \\ 20 \text{ A / 10 A, 100\% \\ } \end{array}$	I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @ 500.1 Hz-999.9 Hz voltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1. ling + 0.5 V/1 V); For all other frequencies:: ng + 1 V / 2 V) 0.01 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) 0.1 A For 45 Hz to 65 Hz and DC:±(12 % of reading + 0.8 A/0.4 A) 1 W ±(2 % of reading + 3 W) 1 VA ±(2 % of reading + 3 VA) 1 VAR ±(2 % of reading + 3 VAR) 0.000 to 1.000 0.001 Up to 40th order of the fundamental wave 200 V / 400 V, 100% 0.1 V, 0.1% Up to 20th±(0.2 % of reading+0.5 V/1 V); 20th to 40th±(0.3 % of reading+0.5 V/1 V); Up to 40th order of the fundamental wave 30 A / 15 A, 100%	ie change from an output current of 0 A to el. h respect to stepwise change from an output ±(0.7 % of reading + 1 V / 2 V) 0.01 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 0.1 A For 45 Hz to 65 Hz and DC:±(12 % of reading + 1 A/0.5 A) 1 W ±(2 % of reading + 4 W) 1 VA ±(2 % of reading + 4 VA) 1 VA 2 VA			
OUTPUT VOLTAGE STABILITY LINE REGULATION ¹¹ LOAD REGULATION ¹² RIPPLE NOISE ¹³ *1. Power source input voltage is 200 maximum current(or its reverse), 1 OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI OUTPUT VOLTAGE RESPONS EFFICIENCY ¹³ *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cur MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ¹¹ PEAK Value CURRENT RMS, AVG Value ¹¹ PEAK Value POWER Active (W) Apparent (VA) Reactive (VAR) LOAD POWER FACTOR LOAD CREST FACTOR HARMONIC VOLTAGE EFFECTIVE VALUE (RMS) PERCENT (%) (AC-INT and 50/60 Hz only) HARMONIC CURRENT EFFECTIVE VALUE (RMS) PERCENT (%)	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ⁴¹ E TIME ⁵² DV / 100 V to 400 V, a loac rent (or its reverse). *3. Resolution Accuracy ⁷² Resolution Accuracy Resolution Accuracy ⁵³ Resolution Accuracy ⁵³ Resolution Accuracy ⁵³ Resolution Accuracy ⁵³ Resolution Accuracy ⁵³ Resolution Accuracy ⁵³ Resolution Range Resolution Range Full Scale Resolution Accuracy ⁵⁸	$ \begin{array}{c} \pm 0.2\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0 \text{ to 100\%, via output termina} \\ 1 \text{ Vrms } 2 \text{ Vrms (TYP)} \\ 1, rated output, *2. For an output voltage of 100 V to 20 on the rear panel. 3. For 5 Hz to 1 MHz components in FIO. OUTPUT VOLTAGE RESPONSE TIME, EF \\ \leq 0.2\% & 050/60 \text{ Hz}, \leq 0.3\% & <500 \text{ Hz}, \leq 0.5\% \\ 100 \text{ us (TYP)} \\ 80\% \text{ or more} \\ d power factor of 1, and in AC mode. *2. For an output For AC mode, at an output voltage of 100 V / 200 V, maximal for AC mode, at an output voltage of 100 V / 200 V, maximal for AC mode, at an output voltage of 100 V / 200 V, maximal for AS Hz to 65 Hz and DC: \pm (0.5\% \text{ of reading} + 0.5 \text{ Hz to 65 Hz and DC: } \pm (0.5\% \text{ of reading} + 0.1 \text{ A}/0.05 \text{ A}); For all other frequencies: \pm (0.7\% \text{ of reading} + 0.2 \text{ A}/0.1 \text{ A}) \\ 0.1 \text{ A} \text{ For 45 Hz to 65 Hz and DC: } \pm (12\% \text{ of reading} + 0.5 \text{ A}/0.25 \text{ A}) \\ 1 \text{ W} \\ \pm (2\% \text{ of reading} + 2 \text{ W}) \\ 1 \text{ VA} \\ \pm (2\% \text{ of reading} + 2 \text{ VA}) \\ 1 \text{ VAR} \\ \pm (2\% \text{ of reading} + 2 \text{ VAR}) \\ 0.000 \text{ to } 1.000 \\ 0.001 \\ 0.001 \\ 0.001 \\ 0.000 \text{ to } 50.00 \\ 0.1 \text{ V}, 0.1\% \\ Up \text{ to 40th order of the fundamental wave 200 V / 400 V, 100\% \\ 0.1 \text{ V}, 0.1\% \\ Up \text{ to 40th} (0.3\% \text{ of reading} + 0.5 \text{ V/1 V}); \\ 20\text{ th to 40th} (0.3\% \text{ of reading} + 0.5 \text{ V/1 V}); \\ 20\text{ th to 40th} (0.3\% \text{ of reading} + 0.5 \text{ V/1 V}); \\ 20\text{ th to 40th} (0.3\% \text{ of reading} + 0.5 \text{ V/1 V}); \\ 0.01 \text{ A}, 100\% \\ 0.01 \text{ A}, 0.1\% \end{array}$	I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @ 500.1Hz-999.9Hz voltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1. ling + 0.5 V/1 V); For all other frequencies: : ng + 1 V / 2 V) 0.01 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) 0.1 A For 45 Hz to 65 Hz and DC:±(2 % of reading + 0.8 A/0.4 A) 1 W ±(2 % of reading + 3 WA) 1 VA ±(2 % of reading + 3 VA) 1 VA ±(2 % of reading + 3 VA) 1 VAR ±(2 % of reading + 3 VAR) 0.000 to 1.000 0.001 0.000 to 50.00 0.01 Up to 40th order of the fundamental wave 200 V / 400 V, 100% 0.1 V, 0.1% Up to 40th ±(0.3 % of reading+0.5 V/1 V); 20th to 40th ±(0.3 % of reading+0.5 V/1 V); 20th to 40th :0.3 % of reading+0.5 V/1 V); 20th to 40th order of the fundamental wave 30 A / 15 A, 100% 0.01 A, 0.1%	 ie change from an output current of 0 A to el. h respect to stepwise change from an output ±(0.7 % of reading + 1 V / 2 V) 0.01 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 0.1 A For 45 Hz to 65 Hz and DC:±(12 % of reading + 1 A/0.5 A) 1 W ±(2 % of reading + 4 W) 1 VA ±(2 % of reading + 4 VA) 1 VA ±(2 % of reading + 4 VA) 1 VA ±(2 % of reading + 4 VAR) 0.000 to 1.000 0.001 0.00 to 50.00 0.01 Up to 40th order of the fundamental wav 200 V / 400 V, 100% 0.1 V, 0.1% Up to 40th el.3 % of reading+0.5 V/1 V) 20th to 40th order of the fundamental wav 40 A / 20 A, 100% 0.01 A, 0.1% 			
DUTPUT VOLTAGE STABILITY LINE REGULATION ¹⁷ LOAD REGULATION ¹⁷ RIPPLE NOISE ¹³ ¹⁷ . Power source input voltage is 200 maximum current(or its reverse), 1 DUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIOI DUTPUT VOLTAGE RESPONS EFFICIENCY ¹³ ¹⁷ . At an output voltage of 50 V to 200 current of 0 A to the maximum cur MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value ¹¹ PEAK Value CURRENT RMS, AVG Value ¹¹ PEAK Value PEAK Value PEAK Value POWER Active (W) Apparent (VA) Reactive (VAR) LOAD POWER FACTOR HARMONIC VOLTAGE EFFECTIVE VALUE (RMS) PERCENT (%) (AC-INT and 50/60 Hz only) HARMONIC CURRENT EFFECTIVE VALUE (RMS)	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD) ^{*1} E TIME ^{*2} DV / 100 V to 400 V, a loac rent (or its reverse). *3. Resolution Accuracy ^{*2} Resolution Accuracy ^{*3} Resolution Accuracy ^{*3} Resolution Accuracy ^{*4} Resolution Accuracy ^{*5*6} Resolution Accuracy ^{*3*6} Resolution Range Resolution Range Full Scale Full Scale	$ \begin{array}{c} \pm 0.2\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0.5\% \text{ or less} \\ 0 \text{ to 100\%, via output termina} \\ 1 \text{ Vrms } 2 \text{ Vrms (TYP)} \\ 1 \text{ Vrms } 2 \text{ Vrms (TYP)} \\ 1 \text{ vrms } 2 \text{ Vrms (TYP)} \\ 1 \text{ vrms } 2 \text{ vrms (TYP)} \\ 1 \text{ on the rear panel. } 3. \text{ For 5 Hz to 1 MHz components in} \\ \hline \textbf{FO, OUTPUT VOLTAGE RESPONSE TIME, EF} \\ \hline & 0.2\% @50/60\text{Hz}, \leq 0.3\% @<500\text{Hz}, \leq 0.5' \\ 100 \text{ us (TYP)} \\ 80\% \text{ or more} \\ 100 \text{ us (TYP)} \\ 80\% \text{ or more} \\ 100 \text{ wer factor of 1, and in AC mode. *2. For an output For AC mode, at an output voltage of 100 V / 200 V, max \\ \hline \text{For A5 Hz to 65 Hz and DC: } \pm (0.5\% \text{ of reading} + 0.1 \text{ V} \text{ For 45 Hz to 65 Hz and DC: } \pm (0.5\% \text{ of reading} + 0.1 \text{ A/O.5 A}); \text{ For all other frequencies} \pm (0.7\% \text{ of reading} + 0.2 \text{ A/O.1 A} \\ 0.1 \text{ A} \text{ For 45 Hz to 65 Hz and DC: } \pm (12\% \text{ of reading} + 0.5 \text{ A/O.25 A}) \\ 1 \text{ W} \\ \pm (2\% \text{ of reading} + 2 \text{ W}) \\ 1 \text{ VA} \\ \pm (2\% \text{ of reading} + 2 \text{ VA}) \\ 1 \text{ VAR } \\ \pm (2\% \text{ of reading} + 2 \text{ VAR}) \\ 0.000 \text{ to 1.000} \\ 0.001 \\ 0.001 \text{ to 20.00} \\ 0.01 \\ Up to 40\text{th order of the fundamental wave } 200 \text{ V / 400 V, 100\% \\ 0.1 \text{ W} to 40\text{th} \pm (0.2\% \text{ of reading} + 0.5 \text{ V/1 V}); \\ 20\text{ th to 40\text{th} \pm (0.3\% \text{ of reading} + 0.5 \text{ V/1 V}); \\ 20\text{ th to 40\text{th} order of the fundamental wave } 20 \text{ A / 10 A, 100\% \\ 20 \text{ A / 10 A, 100\% \\ 20 \text{ A / 10 A, 100\% \\ } \end{array}$	I) 0 V / 200 V to 400 V, a load power factor of 1, stepwis 1 DC mode using the output terminal on the rear pan FICIENCY % @ 500.1 Hz-999.9 Hz voltage of 100 V / 200 V, a load power factor of 1, with imum current, and load power factor of 1. ling + 0.5 V/1 V); For all other frequencies:: ng + 1 V / 2 V) 0.01 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) 0.1 A For 45 Hz to 65 Hz and DC:±(12 % of reading + 0.8 A/0.4 A) 1 W ±(2 % of reading + 3 W) 1 VA ±(2 % of reading + 3 VA) 1 VAR ±(2 % of reading + 3 VAR) 0.000 to 1.000 0.001 Up to 40th order of the fundamental wave 200 V / 400 V, 100% 0.1 V, 0.1% Up to 20th±(0.2 % of reading+0.5 V/1 V); 20th to 40th±(0.3 % of reading+0.5 V/1 V); Up to 40th order of the fundamental wave 30 A / 15 A, 100%	ie change from an output current of 0 A to el. h respect to stepwise change from an output ±(0.7 % of reading + 1 V / 2 V) 0.01 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 0.1 A For 45 Hz to 65 Hz and DC:±(2 % of reading + 1 A/0.5 A) 1 W ±(2 % of reading + 4 W) 1 VA ±(2 % of reading + 4 VA) 1 VA ±(2 % of reading + 4 VAR) 0.000 to 1.000 0.001 0.00 to 50.00 0.01 Up to 40th order of the fundamental wave 200 V / 400 V, 100% 0.1 V, 0.1% Up to 20th±(0.2 % of reading+0.5 V/1 V); 20th to 40th=(0.3 % of reading+0.5 V/1 V); Up to 40th order of the fundamental wave 40 A / 20 A, 100%			

SPECIFICATIONS				
	ASR-3200	ASR-3300	ASR-3400	
*1. The voltage display is set to RMS in AC/AC+DC mode and 57 V to 570 V and 23 °C \pm 5 °C. *3. An output current in t *4. An output current in the range of 5 % to 100 % of the max The accuracy of the peak value is for a waveform of DC or *5. For an output voltage of 50 V or greater, an output current %. The apparent and reactive powers are not displayed in the *8. An output voltage in the range of 20 V to 200 V / 40 V to 4	he range of 5 % to 100 % of the maximum current, and 2 mum peak current in AC mode, an output current in the inte wave in the range of 10 % to 100 % of the maximum current, [DC mode. *7. The reactive power is for the load with the	3 °C ± 5 °C. range of 5 % to 100 % of the maximum instantaneou DC or an output frequency of 45 Hz to 65 Hz, and 23	is current in DC mode, and 23 °C \pm 5 °C.	
OTHERS	1			
PROTECTIONS DISPLAY MEMORY FUNCTION ARBITRARY WAVE Number of Memories Waveform Length	UVP, OCP, OTP, OPP, FAN Fail TFT-LCD, 4.3 inch Store and recall settings, Basic settings: 10 16 (nonvolatile) 4096 words	(0~9 numeric keys)		
INTERFACE Standard USB LAN RS-232C EXT Control GPIB	Type A: Host, Type B: Slave, Speed: 1.1/2.0, MAC Address, DNS IP Address, User Passw Complies with the EIA-RS-232 specifications	ord, Gateway IP Address, Instrument IP Ad	ldress, Subnet Mask	
INSULATION RESISTANCE Between input and chassis, output and chassis, input and outpu WITHSTAND VOLTAGE Between input and chassis, output and chassis, input and outpu EMC	1500 Vac, 1 minute 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 Environment Operating Environment Operating Temperature Range Storage Temperature Range Operating Humidity Range Storage Humidity Range Altitude	EN 61010-1 Indoor use, Overvoltage Category II 0 °C to 40 °C -10 °C to 70 °C 20 % RH to 80 % RH (no condensation) 90 % RH or less (no condensation) Up to 2000 m			
DIMENSIONS & WEIGHT	430(W)×176(H)×550(D)mm (not including	protrusions); Approx. 25 kg		
ORDERING INFORMATION ASR-3200 2kVA Programmable AC/DC ASR-3300 3kVA Programmable AC/DC ASR-3400 4kVA Programmable AC/DC ACCESSORIES CD (User Manual/Programming Manual), Safety G Terminal Cover Include Remote Sensing, GRA-442-1	Power Source GPW-0 Power Source GPW-0 Power Source GPW-0 GRA-4 uide, Input Terminal Cover, Output	Specifications subject t DNAL ACCESSORIES 105 Power Cord, 3m, 105°C, UL/CSA Type 106 Power Cord, 3m, 105°C, VDE Type 107 Power Cord, 3m, 105°C, PSE Type 107 Power Cord, 3m, 105°C, PSE Type 107 Output Power Wire(Load wire_ 10AWG: 50A, 600V/ Sense wire_	o change without notice. ASR-3000CD1DI GTL-232 RS232C cable, approx. 2m GTL-248 GPIB Cable, approx. 2m ASR-002 External Three Phase Control Unit APS-008 Air inlet filter	

ASR-002

APS-008

GPW-005

GRA-442-J

GTL-137





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