

# **ASR-3000 Series**

**Programmable AC/DC Power Source** 

# **FEATURES**

- Output Rating: AC 0  $\sim$  400 Vrms, DC 0  $\sim$  ± 570 V
- Output Frequency up to 999.9 Hz
- DC Output (100% of Rated Power)
- Measurement Items: Vrms, Vavg, Vpeak, Irms, IpkH, lavg, 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 (≦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.

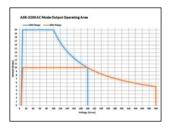
The ASR-3000 Series provides users with waveform output capabilities including 1) Sequence mode generates waveform fallings, surges, sags, changes and other abnormal power line conditions; 2) Arbitrary waveform function allows users to store/upload user-defined waveforms; and 3) Simulate mode simulates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

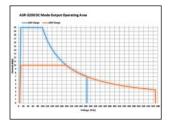
The front panel of the ASR-3000 Series provides a universal socket or a European socket, which allows users to plug and use so as to save wiring time. Since the power socket specification has a maximum current of 15A, the rear panel of ASR-3000 Series is designed with a current circuit breaker. When 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.

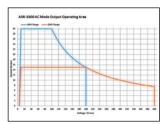


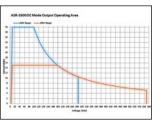


# . OPERATING AREA FOR ASR-3000 SERIES









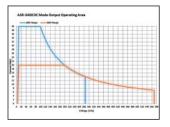
**AC Output for ASR-3200** 

DC Output for ASR-3200

AC Output for ASR-3300

DC Output for ASR-3300

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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

AC Output for ASR-3400

DC Output for ASR-3400

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



Vavg	+0.2	٧		0.0	w	[Simple] Harm
lavg	-0.00	А		2.9	VA	RMS [AVG]
				+2.9	var	PEAK
			PF	0.000		
lpkH	+0.19	Apk	CF	0.00		[RUN]



**RMS Meas Display** 

**AVG Meas Display** 

Peak Meas Display

ON	ON	ON	ON	200V SQUE		13
Harr	Harn	Harn	Harmon	ic Voltage Measure	THDV= 42.2 %	Simple
31th	21th	11th	1st	179.9 Vrms	90.7 %	[Harm]
32th	22th	12th	2nd	0.0 Vrms	0.0%	THE REAL PROPERTY.
33th	23th	13th	3rd	59.8 Vrm:	30.2 %	[THOV]
34th	24th	14th	4th	0.0 Vrms	0.0 %	THDI
35th	25th	15th	Sth	35.8 Vrm t	18.0 %	
36th	26th	16th	6th	0.0 Vrms	0.0 %	
37th	27th	17th	7th	25.5 Vrm:	12.9 %	
38th	28th	18th	Sth	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

**Current Harmonic** 

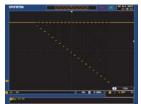
The ASR-3000 Series provides users with measurement capabilities including Vrms, Vavg, Vpeak, Irms, Iavg, Ipeak, IpkH, P, S, Q, PF, CF, 40th-order Voltage Harmonic and Current Harmonic. During the power output, the measurement

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.

# C. SEQUENCE MODE AND BUILT-IN ISO-16750-2 WAVEFORMS

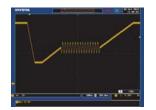




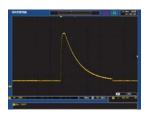


SEQ7: Reset Behavior at Voltage Drop with 12V System

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.



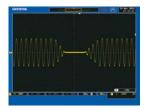
SEQ8: Starting Profile Waveform

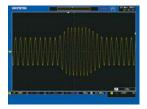


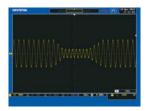
SEQ9: Load Dump with Tr\_10ms, Td\_40ms

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







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.

**Power Outage** 

Voltage Rise

Voltage Fall

# **FUNCTION WAVEFORM (ARBITRARY EDIT) MODE**











TRI Waveform

**STAIR Waveform** 

**CLIP Waveform** 

**SURGE Waveform** 

Fourier Series Synthesized Waveform

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

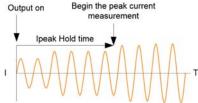
**ARB Waveform Edit** 

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.

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.

# T, IPK HOLD & IPK, HOLD FUNCTIONS

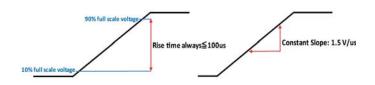


# T, Ipk Measurement

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.

#### Н. **SLEW RATE MODE**



#### Time Mode

# Slope Mode

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 100µs; 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.

SPECIFICATIONS		ASR-3200	ASR-3300	ASR-3400
INPUT RATING (AC)		A3R-3200	N36-3300	A3R-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 MAX. POWER CONSUMPTION	NI.	47 Hz to 63 Hz 2500 VA or less	47 Hz to 63 Hz 3750 VA or less	47 Hz to 63 Hz 5000 VA or less
POWER FACTOR*1	200Vac	0.95 (TYP)	0.95 (TYP)	0.95 (TYP)
MAX. INPUT CURRENT	200Vac	15 A	22.5 A	30 A
*1. For an output voltage of 100 V/20		naximum current, and a load power factor of 1.		
AC MODE OUTPUT RATINGS	(AC rms)			
VOLTAGE	Setting Range <sup>*1</sup> Setting Resolution Accuracy <sup>*2</sup>	0.0 V to 200.0 V / 0.0 V to 400.0 V 0.1 V ±(1 % of set + 1 V / 2 V)		
OUTPUT PHASE	Accuracy	Single phase, Two-wire		
MAXIMUM CURRENT*3	100 V	20 A	30 A	40 A
	200 V	10 A	15 A	20 A
MAXIMUM PEAK CURRENT*	100 V	120 A	180 A	240 A
LOAD POWER FACTOR	200 V	60 A 0 to 1 (leading phase or lagging phase)	90 A 0 to 1 (leading phase or lagging phase)	120 A 0 to 1 (leading phase or lagging phase)
POWER CAPACITY	C III D	2000 VA	3000 VA	4000 VA
FREQUENCY	Setting Range Setting Resolution Accuracy	AC Mode: 40.00 Hz to 999.9 Hz, AC+DC M 0.01 Hz (1.00 to 99.99 Hz), 0.1 Hz (100.0 to 0.02% of set (23 °C ± 5 °C)		
OUTDUT ON BUACE	Stability*5	± 0.005%		
DC OFFSET <sup>6</sup>		0° to 359° variable (setting resolution 1°) Within ± 20 mV (TYP)	1 1 100 100 100	
<ul> <li>*3. For an output voltage of 1 V to 100 maximum current. In the case of le</li> <li>*4. With respect to the capacitor-inpu</li> </ul>	0 V / 2 V to 200 V. Limited ower than 40 Hz, and the t rectifying load. Limited b out voltage, no load and th	00 V / 40 V to 400 V, an output frequency of 45 Hz to 65 d by the power capacity when the output voltage is 100 V power rating temperature, the maximum current will be by the maximum current. he resistance load for the maximum current, and the ope	to 200 V / 200 V to 400 V. If there is the DC superimedecrease.	
VOLTAGE	Setting Range <sup>*1</sup>	-285 V to + 285 V / -570 V to +570 V		
VOLINGE	Setting Resolution	0.1 V		
	Accuracy*2	±(1 % of set + 1 V / 2 V)		
MAXIMUM CURRENT*3	100 V	20 A	30 A	40 A
	200 V	10 A	15 A	20 A
MAXIMUM PEAK CURRENT <sup>™</sup>	100 V 200 V	120 A 60 A	180 A 90 A	240 A 120 A
POWER CAPACITY	_00 1	2000 W	3000 W	4000 W
\$1 100 V / 200 V +2 F				
		to -28.5 V, +28.5 V to +285 V / -570 V to -57 V, +57 V to +		iximum current
	00 V / 2.8 V to 200 V. Lim	to -28.5 V, +28.5 V to +285 V $/$ -570 V to -57 V, +57 V to + nited by the power capacity when the output voltage is 10		iximum current.
*3. For an output voltage of 1.4 V to 1	00 V / 2.8 V to 200 V. Lim		00 V to 250 V / 200 V to 500 V. *4. Limited by the ma	ximum current.
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION*1 LOAD REGULATION*2 RIPPLE NOISE*3	00 V / 2.8 V to 200 V. Lim	tited by the power capacity when the output voltage is 10 ±0.2% or less 0.5% or less (0 to 100%, via output termina 1 Vrms / 2 Vrms (TYP)	00 V to 250 V / 200 V to 500 V. *4. Limited by the ma	
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION*1 LOAD REGULATION*2 RIPPLE NOISE*3 *1. Power source input voltage is 200 maximum current(or its reverse),	00 V / 2.8 V to 200 V. Lim	±0.2% or less 0.5% or less (0 to 100%, via output termina 1 Vrms / 2 Vrms (TYP) d, rated output. *2. For an output voltage of 100 V to 20 on the rear panel. 3. For 5 Hz to 1 MHz components is	00 V to 250 V / 200 V to 500 V. *4. Limited by the ma	se change from an output current of 0 A to
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION*1 LOAD REGULATION*2 RIPPLE NOISE*3 *1. Power source input voltage is 200 maximum current(or its reverse), OUTPUT VOLTAGE WAVEFOR	00 V / 2.8 V to 200 V. Lim V, 220 V, or 240 V, no load using the output terminal IM DISTORTION RAT	±0.2% or less 0.5% or less (0 to 100%, via output termina 1 Vrms / 2 Vrms (TYP) d, 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	20 V to 250 V / 200 V to 500 V. *4. Limited by the ma	se change from an output current of 0 A to
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*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION* LOAD REGULATION* **1. Power source input voltage is 200 maximum current(or its reverse), OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIO OUTPUT VOLTAGE RESPONS EFFICIENCY**  *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cu MEASURED VALUE DISPLAY	V, 220 V, or 240 V, no load using the output terminal RM DISTORTION RATIN(THD) <sup>81</sup> E TIME <sup>82</sup> DV / 100 V to 400 V, a load reent (or its reverse). *3.	±0.2% or less 0.5% or less (0 to 100%, via output termina 1 Vrms / 2 Vrms (TYP)  d, 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 ≤ 0.2% @50/60Hz, ≤ 0.3% @<500Hz, ≤ 0.5 100 us (TYP)  80 % 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, man	20 V to 250 V / 200 V to 500 V. *4. Limited by the mail  10 V / 200 V to 400 V, a load power factor of 1, stepwis  10 DC mode using the output terminal on the rear pan  17 ICIENCY  18 @ 500.1 Hz-999.9 Hz  19 voltage of 100 V / 200 V, a load power factor of 1, witkimum current, and load power factor of 1.	se change from an output current of 0 A to el. h respect to stepwise change from an output
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION* LOAD REGULATION* *1. Power source input voltage is 200 maximum current(or its reverse), OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTION OUTPUT VOLTAGE RESPONS EFFICIENCY*3 *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cu MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value*	V, 220 V, or 240 V, no load using the output terminal limits by The Time Time Time Time Time Time Time Tim	±0.2% or less 0.5% or less (0 to 100%, via output termina 1 Vrms / 2 Vrms (TYP) d, 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 ≤ 0.2% @50/60Hz, ≤ 0.3% @<500Hz, ≤ 0.5 100 us (TYP) 80 % 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, ma:  0.1 V For 45 Hz to 65 Hz and DC: ±(0.5 % of reac	20 V to 250 V / 200 V to 500 V. *4. Limited by the many control of	se change from an output current of 0 A to el. h respect to stepwise change from an output
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION 1 LOAD REGULATION 2 RIPPLE NOISE 3 *1. Power source input voltage is 200 maximum current(or its reverse), OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTION OUTPUT VOLTAGE RESPONS EFFICIENCY 3 *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cu MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value 1	V, 220 V, or 240 V, no load using the output terminal the DISTORTION RAT N(THD) <sup>12</sup> E TIME <sup>12</sup> Resolution  Accuracy <sup>12</sup> Resolution  Accuracy <sup>12</sup> Resolution	±0.2% or less  0.5% or less (0 to 100%, via output termina 1 Vrms / 2 Vrms (TYP)  d, 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  ≤ 0.2% @50/60Hz, ≤ 0.3% @<500Hz, ≤ 0.5 100 us (TYP)  80 % 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, ma:  0.1 V  For 45 Hz to 65 Hz and DC: ±(0.5 % of read of 100 V) and C: ±(12 % of reading +0.1 A/0.05 A); For all other	20 V to 250 V / 200 V to 500 V. *4. Limited by the main of the property of the main of the	the change from an output current of 0 A to el.  The respect to stepwise change from an output the control of t
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION* LOAD REGULATION* *1. Power source input voltage is 200 maximum current(or its reverse), OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTION OUTPUT VOLTAGE RESPONS EFFICIENCY*3  *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cu MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value*  PEAK Value	V, 220 V, or 240 V, no load using the output terminal MDISTORTION RAT N(THD) The TIME To V / 100 V to 400 V, a load reent (or its reverse). *3.  Resolution Accuracy Resolution Accuracy Resolution	±0.2% or less 0.5% or less (0 to 100%, via output terminal 1 Vrms / 2 Vrms (TYP)  B. 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  ≤ 0.2% @50/60Hz, ≤ 0.3% @<500Hz, ≤ 0.5 100 us (TYP) 80 % 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: ±( 2 % of reading+0.1 A/0.05 A); For all other frequencies:±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC:±( 2 % of reading+0.1 A/0.05 A); For all other frequencies:±(0.7 % of reading+0.2 A/0.1 A) For 45 Hz to 65 Hz and DC:±( 2 % of	20 V to 250 V / 200 V to 500 V. *4. Limited by the mail  10 V / 200 V to 400 V, a load power factor of 1, stepwis 10 DC mode using the output terminal on the rear part  FICIENCY  **4. Limited by the mail  10 V / 200 V to 400 V, a load power factor of 1, stepwis 10 DC mode using the output terminal on the rear part  FICIENCY  **4. Limited by the mail  10 V / 200 V to 400 V, a load power factor of 1, with  10 V / 200 V to 400 V, a load power factor of 1, with  11 with power factor of 1.  12 voltage of 100 V / 200 V, a load power factor of 1, with  13 kimum current, and load power factor of 1.  14 ding + 0.5 V/1 V); For all other frequencies:  15 ung + 1 V / 2 V)  16 ung + 1 V / 2 V)  17 ung + 1 V / 2 V)  18 ung + 1 V / 2 V)  19 ung + 1 V / 2 V)  10 ung + 1 V / 2	be change from an output current of 0 A to rel.  th 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)  For 45 Hz to 65 Hz and DC:±( 2 % of
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION* LOAD REGULATION* *1. Power source input voltage is 200 maximum current(or its reverse), OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIO OUTPUT VOLTAGE RESPONS EFFICIENCY*  *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cu MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value*  PEAK Value  CURRENT RMS, AVG Value	V, 220 V, or 240 V, no load using the output terminal 2M DISTORTION RAT N(THD)**  E TIME**2  OV / 100 V to 400 V, a load reent (or its reverse). *3.  Resolution Accuracy**2  Resolution Accuracy**3  Resolution Accuracy**3	±0.2% or less 0.5% or less (0 to 100%, via output terminal 1 Vrms / 2 Vrms (TYP)  B. 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 100 UTPUT VOLTAGE RESPONSE TIME, EF  ≤ 0.2% @50/60Hz, ≤ 0.3% @<500Hz, ≤ 0.5 100 us (TYP) 80 % 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: ±( 2 % of reading+0.1 A/0.05 A); For all other frequencies:±(0.7 % of reading+0.2 A/0.1 A) 0.1 A  For 45 Hz to 65 Hz and DC:±( 2 % of reading+0.1 A/0.05 A); For all other frequencies:±(0.7 % of reading+0.2 A/0.1 A) 0.1 A  For 45 Hz to 65 Hz and DC:±( 2 % of reading+0.5 A/0.25 A)	20 V to 250 V / 200 V to 500 V. *4. Limited by the mail  10 V / 200 V to 400 V, a load power factor of 1, stepwis 10 DC mode using the output terminal on the rear pare  FICIENCY  **4. Limited by the mail  10 V / 200 V to 400 V, a load power factor of 1, stepwis 10 DC mode using the output terminal on the rear pare  FICIENCY  **4. Limited by the mail  10 V / 200 V to 400 V, a load power factor of 1, with stepwish  10 DC mode using the output terminal on the rear pare  11 V / 2 V)  12 Voltage of 100 V / 200 V, a load power factor of 1, with stepwish  13 Voltage of 100 V / 200 V, a load power factor of 1, with stepwish  14 V / 2 V)  15 Voltage of 100 V / 200 V, a load power factor of 1, with stepwish  16 Voltage of 100 V / 200 V, a load power factor of 1, with stepwish  17 Voltage of 100 V / 200 V, a load power factor of 1, with stepwish  18 Voltage of 100 V / 200 V, a load power factor of 1, with stepwish  19 Voltage of 100 V / 200 V, a load power factor of 1, with stepwish  20 Voltage of 100 V / 200 V, a load power factor of 1, with stepwish  20 Voltage of 100 V / 200 V, a load power factor of 1, with stepwish  20 Voltage of 100 V / 200 V, a load power factor of 1, with stepwish  20 Voltage of 100 V / 200 V, a load power factor of 1, with stepwish  20 Voltage of 100 V / 200 V, a load power factor of 1, with stepwish  20 Voltage of 100 V / 200 V, a load power factor of 1, with stepwish  20 Voltage of 100 V / 200 V, a load power factor of 1, with stepwish  20 Voltage of 100 V / 200 V, a load power factor of 1, with stepwish  20 Voltage of 100 V / 200 V, a load power factor of 1, with stepwish  20 Voltage of 100 V / 200 V, a load power factor of 1, with stepwish  20 Voltage of 100 V / 200 V, a load power factor of 1, with stepwish  20 Voltage of 100 V / 200 V, a load power factor of 1, with stepwish  20 Voltage of 100 V / 200 V, a load power factor of 1, with stepwish  20 Voltage of 100 V / 200 V, a load power factor of 1, with stepwish  20 Voltage of 100 V / 200 V, a load power factor of 1, with stepwish  20 Volta	be change from an output current of 0 A to el.  h respect to stepwise change from an output  \(\pm(0.7 \% \) of reading + 1 V / 2 V)  0.01 A  For 45 Hz to 65 Hz and DC:\(\pm(0.5 \% \) of reading+0.2 A/0.1 A); For all other frequencies:\(\pm(0.7 \% \) of reading+0.4 A/0.2 A) 0.1 A  For 45 Hz to 65 Hz and DC:\(\pm(12 \% \) of reading+0.4 A/0.2 A)
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION* LOAD REGULATION* *1. Power source input voltage is 200 maximum current(or its reverse), OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTION OUTPUT VOLTAGE RESPONS EFFICIENCY*3  *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cu MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value*  PEAK Value  CURRENT RMS, AVG Value	V, 220 V, or 240 V, no load using the output terminal limits by the compart of th	±0.2% or less  0.5% or less (0 to 100%, via output termina 1 Vrms / 2 Vrms (TYP)  d, 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 170, OUTPUT VOLTAGE RESPONSE TIME, EF  ≤ 0.2% @50/60Hz, ≤ 0.3% @<500Hz, ≤ 0.5 100 us (TYP)  80 % 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 10.0 V) of 10.1 V  For 45 Hz to 65 Hz and DC: ±(12 % of reading +0.1 A/0.05 A); For all other frequencies: ±(0.7 % of reading +0.2 A/0.1 A)  0.1 A  For 45 Hz to 65 Hz and DC: ±(12 % of reading +0.1 A/0.05 A); For all other frequencies: ±(0.7 % of reading +0.2 A/0.1 A)  0.1 A  For 45 Hz to 65 Hz and DC: ±(12 % of reading +0.5 Hz to 65 Hz and DC: ±(12 % of reading +0.5 A/0.25 A)  1 W	20 V to 250 V / 200 V to 500 V. *4. Limited by the main and the state of the main and the state of the main and the state of the state	be 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
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION* LOAD REGULATION* *1. Power source input voltage is 200 maximum current(or its reverse), OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTION OUTPUT VOLTAGE RESPONS EFFICIENCY* *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cu MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value*  PEAK Value  CURRENT RMS, AVG Value  PEAK Value  PEAK Value  PEAK Value	V, 220 V, or 240 V, no load using the output terminal the MDISTORTION RATINGTHON (THD) The TIME of the contract of the contrac	±0.2% or less  0.5% or less (0 to 100%, via output terminal 1 Vrms / 2 Vrms (TYP)  d, 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  ≤ 0.2% @50/60Hz, ≤ 0.3% @<500Hz, ≤ 0.5 100 us (TYP) 80 % 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 100 V) / 200 V, max  0.1 V For 45 Hz to 65 Hz and DC: ±(12 % of read of 100 V) / 200 V, max  0.1 V For 45 Hz to 65 Hz and DC: ±(12 % of read of 100 V) / 200 V, max  0.1 V For 45 Hz to 65 Hz and DC: ±(12 % of read of 100 V) / 200 V, max  0.1 V For 45 Hz to 65 Hz and DC: ±(12 % of read of 100 V) / 200 V, max  0.1 V For 45 Hz to 65 Hz and DC: ±(12 % of read of 100 V) / 200 V, max  0.1 V For 45 Hz to 65 Hz and DC: ±(12 % of read of 100 V) / 200 V, max  0.1 V For 45 Hz to 65 Hz and DC: ±(12 % of read of 100 V) / 200 V, max  0.1 V For 45 Hz to 65 Hz and DC: ±(12 % of read of 100 V) / 200 V, max  0.1 V For 45 Hz to 65 Hz and DC: ±(12 % of read of 100 V) / 200 V, max	20 V to 250 V / 200 V to 500 V. *4. Limited by the mail  20 V / 200 V to 400 V, a load power factor of 1, stepwis 21 DC mode using the output terminal on the rear part  22 FICIENCY  23 Soon.1 Hz-999.9 Hz  24 Voltage of 100 V / 200 V, a load power factor of 1, with  25 virtual current, and load power factor of 1.  26 ding + 0.5 V/1 V); For all other frequencies:  27 ng   + 1 V / 2 V)  28 Olo 1 A  29 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)  20 1 A  20 For 45 Hz to 65 Hz and DC:±( 2 % of reading  + 0.8 A/0.4 A)  20 1 W  20 4 C g of reading + 3 W)	be change from an output current of 0 A to el.  The respect to stepwise change from an output  the control of t
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION* LOAD REGULATION* **1. Power source input voltage is 200 maximum current(or its reverse), OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIO OUTPUT VOLTAGE RESPONS EFFICIENCY*  *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cu MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value*  PEAK Value  CURRENT RMS, AVG Value	V, 220 V, or 240 V, no load using the output terminal limits by the compart of th	±0.2% or less  0.5% or less (0 to 100%, via output termina  1 Vrms / 2 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  ≤ 0.2% @50/60Hz, ≤ 0.3% @<\$00Hz, ≤ 0.5 100 us (TYP)  80 % 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 0.1 V  For 45 Hz to 65 Hz and DC: ±(12 % of reading+0.1 A/0.05 A); For all other frequencies: ±(0.7 % of reading+0.2 A/0.1 A) 0.1 A  For 45 Hz to 65 Hz and DC: ±(12 % of reading+0.5 A/0.25 A) 1 W  ±(2 % of reading+2 W) 1 VA	20 V to 250 V / 200 V to 500 V. *4. Limited by the mail  20 V / 200 V to 400 V, a load power factor of 1, stepwis  20 DC mode using the output terminal on the rear part  21 FICIENCY  22 Woltage of 100 V / 200 V, a load power factor of 1, with wind current, and load power factor of 1.  23 ding + 0.5 V/1 V); For all other frequencies:  24 ng   + 1 V / 2 V)  25 ng   + 1 V / 2 V)  26 ng   + 1 V / 2 V)  27 ng   + 1 V / 2 V)  28 ng   + 1 V / 2 V)  29 ng   + 1 V / 2 V)  30 ng   + 1 V / 2 V)  40 ng   + 1 V / 2 V    40 ng   + 1 V / 2 V    50 ng   + 1 V / 2 V    60 ng   + 1 V / 2 V    70 ng   + 1 V / 2 V    70 ng   + 1 V / 2 V    80 ng   + 1 V /	be change from an output current of 0 A to let.  th respect to stepwise change from an output  t(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
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION* LOAD REGULATION* *1. Power source input voltage is 200 maximum current(or its reverse), OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTION OUTPUT VOLTAGE RESPONS EFFICIENCY* *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cu MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value  PEAK Value  CURRENT RMS, AVG Value  PEAK Value  PEAK Value  PEAK Value	V, 220 V, or 240 V, no load using the output terminal the DISTORTION RAT N(THD) <sup>42</sup> E TIME <sup>42</sup> OV / 100 V to 400 V, a load rent (or its reverse). *3.  Resolution Accuracy Resolution	±0.2% or less  0.5% or less (0 to 100%, via output terminal 1 Vrms / 2 Vrms (TYP)  d, 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  ≤ 0.2% @50/60Hz, ≤ 0.3% @<500Hz, ≤ 0.5 100 us (TYP) 80 % 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 100 V) / 200 V, max  0.1 V For 45 Hz to 65 Hz and DC: ±(12 % of read of 100 V) / 200 V, max  0.1 V For 45 Hz to 65 Hz and DC: ±(12 % of read of 100 V) / 200 V, max  0.1 V For 45 Hz to 65 Hz and DC: ±(12 % of read of 100 V) / 200 V, max  0.1 V For 45 Hz to 65 Hz and DC: ±(12 % of read of 100 V) / 200 V, max  0.1 V For 45 Hz to 65 Hz and DC: ±(12 % of read of 100 V) / 200 V, max  0.1 V For 45 Hz to 65 Hz and DC: ±(12 % of read of 100 V) / 200 V, max  0.1 V For 45 Hz to 65 Hz and DC: ±(12 % of read of 100 V) / 200 V, max  0.1 V For 45 Hz to 65 Hz and DC: ±(12 % of read of 100 V) / 200 V, max  0.1 V For 45 Hz to 65 Hz and DC: ±(12 % of read of 100 V) / 200 V, max	20 V to 250 V / 200 V to 500 V. *4. Limited by the mail  20 V / 200 V to 400 V, a load power factor of 1, stepwis 21 DC mode using the output terminal on the rear part  22 FICIENCY  23 Soon.1 Hz-999.9 Hz  24 Voltage of 100 V / 200 V, a load power factor of 1, with  25 virtual current, and load power factor of 1.  26 ding + 0.5 V/1 V); For all other frequencies:  27 ng   + 1 V / 2 V)  28 Olo 1 A  29 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)  20 1 A  20 For 45 Hz to 65 Hz and DC:±( 2 % of reading  + 0.8 A/0.4 A)  20 1 W  20 4 C g of reading + 3 W)	be change from an output current of 0 A to el.  The respect to stepwise change from an output  the control of t
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION* LOAD REGULATION* **1. Power source input voltage is 200 maximum current(or its reverse), OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIO OUTPUT VOLTAGE RESPONS EFFICIENCY*  *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cu MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value*  PEAK Value  CURRENT RMS, AVG Value  PEAK Value  PEAK Value  PEAK Value  PEAK Value	V, 220 V, or 240 V, no load using the output terminal M DISTORTION RAT N(THD)*  E TIME*2  O V / 100 V to 400 V, a load rent (or its reverse). *3.  Resolution Accuracy*2 Resolution Accuracy*3  Resolution Accuracy*4  Resolution Accuracy*4  Resolution Accuracy*5  Resolution Accuracy*5  Resolution Accuracy*5  Resolution Accuracy*5	±0.2% or less 0.5% or less 0.5% or less (0 to 100%, via output terminal 1 Vrms / 2 Vrms (TYP)  B. 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  ≤ 0.2% @50/60Hz, ≤ 0.3% @<500Hz, ≤ 0.5 100 us (TYP) 80 % 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 1.5 Hz to 65 Hz and DC: ±(12 % of reading+0.1 A/0.05 A); For all other frequencies:±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC:±(12 % of reading+0.1 A/0.05 A); For all other frequencies:±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC:±(12 % of reading+0.5 A/0.25 A) 1 W ±(2 % of reading+2 W) 1 VA ±(2 % of reading+2 VA)	20 V to 250 V / 200 V to 500 V. *4. Limited by the mail  20 V / 200 V to 400 V, a load power factor of 1, stepwis  20 D C mode using the output terminal on the rear part  21 FICIENCY  22 Woltage of 100 V / 200 V, a load power factor of 1, with simum current, and load power factor of 1.  23 Single + 1 V / 2 V)  24 O C 1 A  25 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)  26 O 1 A  27 For 45 Hz to 65 Hz and DC:±( 2 % of reading+0.8 A/0.4 A)  28 To 45 Hz to 65 Hz and DC:±( 2 % of reading+0.8 A/0.4 A)  29 V 1 V 1 V 1 V 1 V 1 V 1 V 1 V 1 V 1 V	be change from an output current of 0 A to let.  th 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)
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION* LOAD REGULATION* **1. Power source input voltage is 200 maximum current(or its reverse), OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTIO OUTPUT VOLTAGE RESPONS EFFICIENCY*  *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cu MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value*  PEAK Value  CURRENT RMS, AVG Value  PEAK Value  PEAK Value  PEAK Value  PEAK Value	V, 220 V, or 240 V, no load using the output terminal with DISTORTION RATE N(THD) TE TIME 2  DV / 100 V to 400 V, a load rent (or its reverse). *3.  Resolution Accuracy Resolution Resolution Accuracy Resolution Res	±0.2% or less  0.5% or less (0 to 100%, via output termina 1 Vrms / 2 Vrms (TYP)  d, 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 100 VTPU VOLTAGE RESPONSE TIME, EF  ≤ 0.2% @50/60Hz, ≤ 0.3% @<500Hz, ≤ 0.5 100 us (TYP)  80 % 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 100 V) of 100 V / 200 V, max  0.1 V  For 45 Hz to 65 Hz and DC: ±( 2 % of read of 100 V) / 200 V, max  0.1 V  For 45 Hz to 65 Hz and DC: ±( 2 % of read of 100 V) / 200 V, max  100 H  For 45 Hz to 65 Hz and DC: ±( 2 % of read of 100 V) / 200 V, max  100 Hz  100 Hz	20 V to 250 V / 200 V to 500 V. *4. Limited by the main of the mai	be change from an output current of 0 A to el.  th respect to stepwise change from an output  the control 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 t(2 % of reading + 4 W) 1 VA t(2 % of reading + 4 VA) 1 VAR t(2 % of reading + 4 VAR) 0.000 to 1.000
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION* LOAD REGULATION* RIPPLE NOISE*3 *1. Power source input voltage is 200 maximum current(or its reverse), OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTION OUTPUT VOLTAGE RESPONS EFFICIENCY*3 *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cu MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value*  PEAK Value  CURRENT RMS, AVG Value  PEAK Value  PEAK Value  PEAK Value  PEAK Value  LOAD POWER FACTOR	V, 220 V, or 240 V, no load using the output terminal the MDISTORTION RATIN(THD) <sup>41</sup> E TIME <sup>42</sup> OV / 100 V to 400 V, a load rent (or its reverse). *3.  Resolution Accuracy Resolution	±0.2% or less  0.5% or less (0 to 100%, via output terminal 1 Vrms / 2 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 TIO, OUTPUT VOLTAGE RESPONSE TIME, EF  ≤ 0.2% @50/60Hz, ≤ 0.3% @<\$00Hz, ≤ 0.5 100 us (TYP) 80 % 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 100 V) For 45 Hz to 65 Hz and DC: ±(12 % of reading +0.1 A/0.05 A); For all other frequencies: ±(0.7 % of reading +0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: ±(12 % of reading +0.5 A/0.25 A) 1 W ±(2 % of reading + 2 W) 1 VA ±(2 % of reading + 2 VA) 1 VAR ±(2 % of reading + 2 VAR) 0.000 to 1.000 0.001	20 V to 250 V / 200 V to 500 V. *4. Limited by the mail  20 V / 200 V to 400 V, a load power factor of 1, stepwis n DC mode using the output terminal on the rear partificial power factor of 1, with kimum current, and load power factor of 1, with kimum current, and load power factor of 1.  20 John 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)  20 John For 45 Hz to 65 Hz and DC:±( 2 % of reading  + 0.8 A/0.4 A)  30 John For 45 Hz to 65 Hz and DC:±( 2 % of reading  + 0.8 A/0.4 A)  31 VA  42 % of reading + 3 VA)  32 VAR  42 % of reading + 3 VAR)  33 O.000 to 1.000  34 O.001	be change from an output current of 0 A to let.  th respect to stepwise change from an output  the control of t
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION 1 LOAD REGULATION 2 RIPPLE NOISE 3 *1. Power source input voltage is 200 maximum current(or its reverse), OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTION OUTPUT VOLTAGE RESPONS EFFICIENCY 3 *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cu MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value 1 PEAK Value  CURRENT RMS, AVG Value  PEAK Value  PEAK Value  PEAK Value  PEAK Value  POWER Active (W)  Apparent (VA) Reactive (VAR)	V, 220 V, or 240 V, no load using the output terminal the DISTORTION RATE (IT) (IT) (IT) (IT) (IT) (IT) (IT) (IT)	±0.2% or less  0.5% or less (0 to 100%, via output termina 1 Vrms / 2 Vrms (TYP)  d, 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  ≤ 0.2% @50/60Hz, ≤ 0.3% @ <500Hz, ≤ 0.5 100 us (TYP)  80 % 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 on 1 V)  For 45 Hz to 65 Hz and DC: ±(12 % of reading+0.1 A/0.05 A); For all other frequencies: ±(0.7 % of reading+0.2 A/0.1 A)  0.1 A  For 45 Hz to 65 Hz and DC: ±(12 % of reading+0.5 A/0.25 A)  1 W  ±(2 % of reading+2 W)  1 VA  ±(2 % of reading+2 VA)  1 VAR  ±(2 % of reading+2 VAR)  0.000 to 1.000  0.001  0.00 to 50.00	20 V to 250 V / 200 V to 500 V. *4. Limited by the mail  20 V / 200 V to 400 V, a load power factor of 1, stepwis  20 D C mode using the output terminal on the rear part  21 FICIENCY  22 Woltage of 100 V / 200 V, a load power factor of 1, with kimum current, and load power factor of 1.  23 Single + 0.5 V/1 V); For all other frequencies:  24 Ingle + 1 V / 2 V)  25 O.01 A  26 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)  26 O.1 A  27 For 45 Hz to 65 Hz and DC:±( 2 % of reading  + 0.8 A/0.4 A)  27 W  28 ±(2 % of reading + 3 W)  29 VAR  20 volume 1 VAR  20 volume 20 vo	be change from an output current of 0 A to let.  th 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 VAR ±(2 % of reading + 4 VAR) 0.000 to 1.000 0.001 0.001 0.001 to 50.00
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION* LOAD REGULATION* RIPPLE NOISE*3 *1. Power source input voltage is 200 maximum current(or its reverse), OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTION OUTPUT VOLTAGE RESPONS EFFICIENCY*3 *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cu MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value*  PEAK Value  CURRENT RMS, AVG Value  PEAK Value  PEAK Value  PEAK Value  PEAK Value  LOAD POWER FACTOR	V, 220 V, or 240 V, no load using the output terminal the MDISTORTION RATIN(THD) <sup>41</sup> E TIME <sup>42</sup> OV / 100 V to 400 V, a load rent (or its reverse). *3.  Resolution Accuracy Resolution	±0.2% or less  0.5% or less (0 to 100%, via output terminal 1 Vrms / 2 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 TIO, OUTPUT VOLTAGE RESPONSE TIME, EF  ≤ 0.2% @50/60Hz, ≤ 0.3% @<\$00Hz, ≤ 0.5 100 us (TYP) 80 % 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 100 V) For 45 Hz to 65 Hz and DC: ±(12 % of reading +0.1 A/0.05 A); For all other frequencies: ±(0.7 % of reading +0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: ±(12 % of reading +0.5 A/0.25 A) 1 W ±(2 % of reading + 2 W) 1 VA ±(2 % of reading + 2 VA) 1 VAR ±(2 % of reading + 2 VAR) 0.000 to 1.000 0.001	20 V to 250 V / 200 V to 500 V. *4. Limited by the mail  20 V / 200 V to 400 V, a load power factor of 1, stepwis n DC mode using the output terminal on the rear partificial power factor of 1, with kimum current, and load power factor of 1, with kimum current, and load power factor of 1.  20 John 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)  20 John For 45 Hz to 65 Hz and DC:±( 2 % of reading  + 0.8 A/0.4 A)  30 John For 45 Hz to 65 Hz and DC:±( 2 % of reading  + 0.8 A/0.4 A)  31 VA  42 % of reading + 3 VA)  32 VAR  42 % of reading + 3 VAR)  33 O.000 to 1.000  34 O.001	be 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 VAR ±(2 % of reading + 4 VAR) 0.000 to 1.000 0.001 0.00 to 50.00 0.01
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION* LOAD REGULATION* RIPPLE NOISE*3 *1. Power source input voltage is 200 maximum current(or its reverse), OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTION OUTPUT VOLTAGE RESPONS EFFICIENCY*3 *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cu MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value*  PEAK Value  CURRENT RMS, AVG Value*  PEAK Value  PEAK Value  PEAK Value  LOAD POWER FACTOR LOAD POWER FACTOR LOAD CREST FACTOR HARMONIC VOLTAGE EFFECTIVE VALUE (RMS)	V, 220 V, or 240 V, no load using the output terminal the M DISTORTION RATE (IT IN)  W DISTORTION RATE (IT IN)  W DISTORTION RATE (IT IN)  W DISTORTION RATE (IT IN)  RESOLUTION ACCURACY  RESOLUTION	±0.2% or less  0.5% or less (0 to 100%, via output terminal 1 Vrms / 2 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 TIO, OUTPUT VOLTAGE RESPONSE TIME, EF  ≤ 0.2% @50/60 Hz, ≤ 0.3% @<500 Hz, ≤ 0.5 100 us (TYP) 80 % 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 reading+0.1 A/0.05 A); For all other frequencies: ±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: ±( 2 % of reading+0.1 A/0.05 A); For all other frequencies: ±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC: ±( 2 % of reading+0.5 A/0.25 A) 1 W ±(2 % of reading + 2 W) 1 VA ±(2 % of reading + 2 VA) 1 VAR ±(2 % of reading + 2 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%	20 V to 250 V / 200 V to 500 V. *4. Limited by the mail  20 V / 200 V to 400 V, a load power factor of 1, stepwis n DC mode using the output terminal on the rear partificial power factor of 1, with kimum current, and load power factor of 1, with kimum current, and load power factor of 1.  20 July 10 J	be change from an output current of 0 A to let.  th respect to stepwise change from an output  the control of the control of the change from an output  the
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION* LOAD REGULATION* RIPPLE NOISE*3 *1. Power source input voltage is 200 maximum current(or its reverse), OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTION OUTPUT VOLTAGE RESPONS EFFICIENCY*3 *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cu MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value*  PEAK Value  CURRENT RMS, AVG Value  PEAK Value  PEAK Value  PEAK Value  LOAD POWER FACTOR LOAD POWER FACTOR LOAD CREST FACTOR HARMONIC VOLTAGE EFFECTIVE VALUE (RMS) PERCENT (%)	V, 220 V, or 240 V, no load using the output terminal the DISTORTION RATE (IT) (IT) (IT) (IT) (IT) (IT) (IT) (IT)	±0.2% or less  0.5% or less (0 to 100%, via output termina  1 Vrms / 2 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  ≤ 0.2% @50/60Hz, ≤ 0.3% @<500Hz, ≤ 0.5 100 us (TYP)  80 % 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 on 1 V)  For 45 Hz to 65 Hz and DC: ±(12 % of reading+0.1 A/0.05 A); For all other frequencies: ±(0.7 % of reading+0.2 A/0.1 A)  0.1 A  For 45 Hz to 65 Hz and DC:±(12 % of reading)  1 W  ±(2 % of reading + 2 W)  1 VA  ±(2 % of reading + 2 VA)  1 VAR  ±(2 % of reading + 2 VAR)  0.000 to 1.000  0.01  Up to 40th order of the fundamental wave 200 V / 400 V, 100%  0.1 V, 0.1%	20 V to 250 V / 200 V to 500 V. *4. Limited by the mail  20 V / 200 V to 400 V, a load power factor of 1, stepwis n DC mode using the output terminal on the rear participation of the product of 1.  20 V / 200 V to 400 V, a load power factor of 1, stepwis medium of the rear participation of 1.  20 V / 200 V to 400 V, a load power factor of 1, with the product of 1.  20 Sool 1 Hz – 999.9 Hz  20 V / 200 V, a load power factor of 1, with the product of 1.  21 Voltage of 100 V / 200 V, a load power factor of 1, with the product of 1.  22 Voltage of 100 V / 200 V, a load power factor of 1, with the product of 1.  23 Voltage of 100 V / 200 V, a load power factor of 1, with the product of 1.  24 Voltage of 100 V / 200 V, a load power factor of 1, with the product of 1.  25 Voltage of 100 V / 200 V, a load power factor of 1, with the product of 1.  26 Voltage of 100 V / 200 V, a load power factor of 1, with the product of 1.  26 Voltage of 100 V / 200 V, a load power factor of 1, with the product of 1.  26 Voltage of 100 V / 200 V, a load power factor of 1, with the product of 1.  27 Voltage of 100 V / 200 V, a load power factor of 1, with the product of 1.  28 Voltage of 100 V / 200 V, a load power factor of 1, with the product of 1.  29 Voltage of 100 V / 200 V, a load power factor of 1, with the product of 1.  20 V / 400 V, 100 V,	be change from an output current of 0 A to let.  1.
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION* LOAD REGULATION* RIPPLE NOISE*3 *1. Power source input voltage is 200 maximum current(or its reverse), OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTION OUTPUT VOLTAGE RESPONS EFFICIENCY*3 *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cu MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value*  PEAK Value  CURRENT RMS, AVG Value*  PEAK Value  PEAK Value  PEAK Value  LOAD POWER FACTOR LOAD POWER FACTOR LOAD CREST FACTOR HARMONIC VOLTAGE EFFECTIVE VALUE (RMS)	V, 220 V, or 240 V, no load using the output terminal the M DISTORTION RATE (IT IN)  W DISTORTION RATE (IT IN)  W DISTORTION RATE (IT IN)  W DISTORTION RATE (IT IN)  RESOLUTION ACCURACY  RESOLUTION	±0.2% or less 0.5% or less (0.5 100%, via output terminal Vrms / 2 Vrms (TYP) d, 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 ≤ 0.2% @50/60Hz, ≤ 0.3% @<500Hz, ≤ 0.5 100 us (TYP) 80 % 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 100 V) For 45 Hz to 65 Hz and DC: ±(12 % of reading+0.1 A/0.05 A); For all other frequencies:±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC:±(12 % of reading+0.5 V/0.25 A) 1 W ±(2 % of reading + 2 W) 1 VA ±(2 % of reading + 2 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);	00 V to 250 V / 200 V to 500 V. *4. Limited by the mail  10 V / 200 V to 400 V, a load power factor of 1, stepwis for mode using the output terminal on the rear partificial power factor of 1, with the first partial power factor of 1, with the first partial power factor of 1, with the first partial power factor of 1.  10 Jan 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)  10 Jan 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 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 200 V / 400 V, 100%  0.1 V, 0.1%  Up to 20th±(0.2 % of reading+0.5 V/1 V);	be change from an output current of 0 A to rel.  th respect to stepwise change from an output  the control 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 t(2 % of reading + 4 W) 1 VA t(2 % of reading + 4 VA) 1 VAR t(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);
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION 1 LOAD REGULATION 2 RIPPLE NOISE 3 *1. Power source input voltage is 200 maximum current(or its reverse). OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTION OUTPUT VOLTAGE RESPONS EFFICIENCY 3 *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cumes of 50 V to 200 current of 0 A to the maximum cumes of 50 V to 200 current of 0 A to the maximum cumes of 50 V to 200 current of 0 A to the maximum cumes of 50 V to 200 current of 0 A to the maximum cumes of 50 V to 200 current of 0 A to the maximum cumes of 50 V to 200 current of 0 A to the maximum cumes of 50 V to 200 current of 0 A to the maximum cumes of 50 V to 200 current of 0 A to the maximum cumes of 50 V to 200 current of 0 A to the maximum cumes of 50 V to 200 current of 0 A to the maximum cumes of 50 V to 200 current of 0 A to the maximum cumes of 50 V to 200 current of 0 A to the maximum cumes of 50 V to 200 current of 0 A to 10 A	V, 220 V, or 240 V, no load using the output terminal with DISTORTION RATE (THD) To the terminal control of the terminal contr	±0.2% or less 0.5% or less (0 to 100%, via output termina 1 Vrms / 2 Vrms (TYP) d, 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 ≤ 0.2% @50/60Hz, ≤ 0.3% @<500Hz, ≤ 0.5 100 us (TYP) 80 % 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: ±( 2 % of reading+0.1 A/0.05 A); For all other frequencies:±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC:±( 2 % of reading+0.1 A/0.05 A); For all other frequencies:±(0.7 % of reading+0.2 A/0.1 A) 1 W ±(2 % of reading + 2 W) 1 VA ±(2 % of reading + 2 VA) 1 VA ±(2 % of reading + 2 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)	DO V to 250 V / 200 V to 500 V. *4. Limited by the main of the property of the	be change from an output current of 0 A to rel.  10.01 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)  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 VA)  1 VAR  ±(2 % of reading + 4 VA)  1 VAR  ±(2 % of reading + 4 VA)  1 VAR  ±(2 % of reading + 4 VA)  1 VAR  ±(2 % of reading + 4 VA)  1 VAR  ±(2 % of reading + 4 VA)  1 VAR  ±(2 % of reading + 4 VA)  1 VAR  ±(2 % of reading + 4 VA)  1 VAR  ±(2 % of reading + 4 VA)  1 VAR  ±(2 % of reading + 4 VA)  1 VAR  ±(2 % of reading + 4 VA)  1 VAR  ±(2 % of reading + 4 VA)  1 VAR  ±(2 % of reading + 4 VA)  1 VAR  ±(2 % of reading + 4 VA)  1 VAR  ±(2 % of reading + 4 VAR)  0.000 to 50.00  0.01  Up to 40th order of the fundamental wave cover a variety of reading + 0.5 V/1 V);  20th to 40th±(0.2 % of reading+0.5 V/1 V);  20th to 40th±(0.3 % of reading+0.5 V/1 V);
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION '1 LOAD REGULATION '2 RIPPLE NOISE'3 *1. Power source input voltage is 200 maximum current(or its reverse), OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTION OUTPUT VOLTAGE RESPONS EFFICIENCY'3 *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cu MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value  PEAK Value  CURRENT RMS, AVG Value  PEAK Value  PEAK Value  PEAK Value  LOAD POWER FACTOR LOAD CREST 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 with DISTORTION RATE (THD) TETIME 2  DV / 100 V to 400 V, a load rement (or its reverse). *3.  Resolution Accuracy Resolution Range Range Resolution Range Range Resolution Range Resolution Range R	±0.2% or less 0.5% or less (0 to 100%, via output termina 1 Vrms / 2 Vrms (TYP)  d. 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 100 VTPU VOLTAGE RESPONSE TIME, EF  ≤ 0.2% @50/60Hz, ≤ 0.3% @<500Hz, ≤ 0.5 100 us (TYP) 80 % 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 on 1 V) For 45 Hz to 65 Hz and DC: ±( 2 % of reading+0.1 A/0.05 A); For all other frequencies:±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC:±( 2 % of reading+0.5 A/0.25 A) 1 W ±(2 % of reading + 2 W) 1 VA ±(2 % of reading + 2 VA) 1 VA ±(2 % of reading + 2 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	20 V to 250 V / 200 V to 500 V. *4. Limited by the main of the mai	be change from an output current of 0 A to lel.  1. **A to el.**  1. **A to el.*  1. **A to el.**  1. **A to el.*  1. **A to el.*
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION* LOAD REGULATION* RIPPLE NOISE*3 *1. Power source input voltage is 200 maximum current(or its reverse), OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTION OUTPUT VOLTAGE RESPONS EFFICIENCY*3 *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cu MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value*  PEAK Value  CURRENT RMS, AVG Value*  PEAK Value  PEAK Value  PEAK Value  LOAD POWER FACTOR LOAD POWER FACTOR LOAD CREST FACTOR HARMONIC VOLTAGE EFFECTIVE VALUE (RMS) PERCENT (%) (AC-INT and 50/60 Hz only) HARMONIC CURRENT EFFECTIVE VALUE (RMS)	OO V / 2.8 V to 200 V. Lim  V, 220 V, or 240 V, no load using the output terminal with DISTORTION RATE (THD)  M DISTORTION RATE (THD)  E TIME*2  DV / 100 V to 400 V, a load rent (or its reverse). *3.  Resolution Accuracy  Resolution Range Resolution Range Resolution Range Full Scale Resolution Accuracy*8  Range Full Scale	±0.2% or less 0.5% or less (0 to 100%, via output termina 1 Vrms / 2 Vrms (TYP)  d. 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  TOO, OUTPUT VOLTAGE RESPONSE TIME, EF  ≤ 0.2% @50/60Hz, ≤ 0.3% @<500Hz, ≤ 0.5 100 us (TYP) 80 % 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 on 1 V) For 45 Hz to 65 Hz and DC: ±( 2 % of reading+0.1 A/0.05 A); For all other frequencies: ±(0.7 % of reading+0.2 A/0.1 A) 0.1 A  For 45 Hz to 65 Hz and DC: ±( 2 % of reading+0.5 A/0.25 A) 1 W  ±(2 % of reading + 2 W) 1 VA ±(2 % of reading + 2 VA) 1 VAR ±(2 % of reading + 2 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 20 A / 10 A, 100%	20 V to 250 V / 200 V to 500 V. *4. Limited by the main of the mai	be change from an output current of 0 A to let.  10.01 A  10.02 A  10.01 A  10.02 A  10.03 A  10.04 A  10.05 A  10.04 A  10.05 A  10.06 A  10.07 A  10.08 A
*3. For an output voltage of 1.4 V to 1 OUTPUT VOLTAGE STABILITY LINE REGULATION '1 LOAD REGULATION '2 RIPPLE NOISE '3 *1. Power source input voltage is 200 maximum current(or its reverse), OUTPUT VOLTAGE WAVEFOR TOTAL HARMONIC DISTORTION OUTPUT VOLTAGE RESPONS EFFICIENCY '3 *1. At an output voltage of 50 V to 200 current of 0 A to the maximum cu MEASURED VALUE DISPLAY VOLTAGE RMS, AVG Value '1  PEAK Value  CURRENT RMS, AVG Value  PEAK Value  PEAK Value  PEAK Value  LOAD POWER FACTOR LOAD POWER FACTOR LOAD CREST 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 with DISTORTION RATE (THD) TETIME 2  DV / 100 V to 400 V, a load rement (or its reverse). *3.  Resolution Accuracy Resolution Range Range Resolution Range Range Resolution Range Resolution Range R	±0.2% or less 0.5% or less (0 to 100%, via output termina 1 Vrms / 2 Vrms (TYP)  d. 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 100 VTPU VOLTAGE RESPONSE TIME, EF  ≤ 0.2% @50/60Hz, ≤ 0.3% @<500Hz, ≤ 0.5 100 us (TYP) 80 % 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 on 1 V) For 45 Hz to 65 Hz and DC: ±( 2 % of reading+0.1 A/0.05 A); For all other frequencies:±(0.7 % of reading+0.2 A/0.1 A) 0.1 A For 45 Hz to 65 Hz and DC:±( 2 % of reading+0.5 A/0.25 A) 1 W ±(2 % of reading + 2 W) 1 VA ±(2 % of reading + 2 VA) 1 VA ±(2 % of reading + 2 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	20 V to 250 V / 200 V to 500 V. *4. Limited by the main of the mai	be change from an output current of 0 A to lel.  1. **A to el.**  1. **A to el.*  1. **A to el.**  1. **A to el.*  1. **A to el.*

SPECIFICATIONS ASR-3200 **ASR-3300** 

\*1. The voltage display is set to RMS in AC/AC+DC mode and AVG in DC mode. \*2. AC mode: For an output voltage of 20 V to 200 V / 40 V to 400 V and 23 °C ± 5 °C. DC mode: For an output voltage of 28.5 V to 285 V / 57 V to 570 V and 23 °C ± 5 °C. \*3. An output current in the range of 5 % to 100 % of the maximum current, and 23 °C ± 5 °C.

\*4. An output current in the range of 5 % to 100 % of the maximum peak current in the range of 5 % to 100 % of the maximum instantaneous current in DC mode, and 23 °C ± 5 °C.

The accuracy of the peak value is for a waveform of DC or sine wave

110c accuracy of the peak value is for a waveform of UC or sine wave \*5. For an output voltage of 50 V or greater, an output current in the range of 10 % to 100 % of the maximum current, DC or an output frequency of 45 Hz to 65 Hz, and 23 °C ± 5 °C. \*6. The apparent and reactive powers are not displayed in the DC mode. \*7. The reactive power is for the load with the power factor 0.5 or lower. \*8. An output voltage in the range of 20 V to 200 V / 40 V to 400 V and 23 °C ± 5 °C.

OTHERS

**PROTECTIONS** DISPLAY

MEMORY FUNCTION

ARBITRARY WAVE Number of Memories

Waveform Length LISR INTERFACE Standard

LAN

RS-232C **EXT Control** 

INSULATION RESISTANCE Between input and chassis, output

ut and chassis, input and outpu

WITHSTAND VOLTAGE en input and chassis, output and chassis, input and outpu

Safety

Environment **Operating Environment** 

**Operating Temperature Range** Storage Temperature Range **Operating Humidity Range** Storage Humidity Range Altitude

ASR-3200 2kVA Programmable AC/DC Power Source ASR-3300 3kVA Programmable AC/DC Power Source

ASR-3400 4kVA Programmable AC/DC Power Source

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

**DIMENSIONS & WEIGHT** 

UVP, OCP, OTP, OPP, FAN Fail

TFT-LCD, 4.3 inch

Store and recall settings, Basic settings: 10 (0~9 numeric keys)

16 (nonvolatile) 4096 words

Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB-CDC, USB-TMC

MAC Address, DNS IP Address, User Password, Gateway IP Address, Instrument IP Address, Subnet Mask

Complies with the EIA-RS-232 specifications External Signal Input; External Control I/O SCPI-1993, IEEE 488.2 compliant interface

500 Vdc, 30 M $\Omega$  or more

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

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

430(W)×176(H)×550(D)mm (not including protrusions); Approx. 25 kg

Specifications subject to change without notice. ASR-3000CD1DH

GPW-005 Power Cord, 3m, 105  $^{\circ}$ C, UL/CSA Type **GPW-006** Power Cord, 3m, 105°C, VDE Type GPW-007 Power Cord, 3m, 105℃, PSE Type

GRA-442-J Rack Mount Adapter (JIS) GTL-137 Output Power Wire (Load wire\_ 10AWG: 50A, 600V/ Sense wire\_

16AWG: 20A, 600V)

GTL-232 RS232C cable, approx. 2m

GTL-248 GPIB Cable, approx. 2m ASR-002 External Three Phase Control Unit

APS-008 Air inlet filter

\* European Output Outlet(factory installed)

**ASR-002 APS-008 GPW-005** GRA-442-J GTL-137











Global Headquarters

# GOOD WILL INSTRUMENT CO., LTD.

No.7-1, Jhongsing Road, Tucheng Dist., New Taipei City 236, Taiwan T +886-2-2268-0389 F +886-2-2268-0639 E-mail: marketing@goodwill.com.tw

China Subsidiary

#### GOOD WILL INSTRUMENT (SUZHOU) CO., LTD.

No. 521, Zhujiang Road, Snd, Suzhou Jiangsu 215011 China T+86-512-6661-7177 F+86-512-6661-7277

Malaysia Subsidiary

# GOOD WILL INSTRUMENT (SEA) SDN. BHD.

No. 1-3-18, Elit Avenue, Jalan Mayang Pasir 3, 11950 Bayan Baru, Penang, Malaysia T+604-6111122 F+604-6115225

Europe Subsidiary

#### GOOD WILL INSTRUMENT EURO B.V.

De Run 5427A, 5504DG Veldhoven, THE NETHERLANDS T+31(0)40-2557790 F+31(0)40-2541194

U.S.A. Subsidiary

# INSTEK AMERICA CORP.

5198 Brooks Street Montclair, CA 91763, U.S.A. T +1-909-399-3535 F +1-909-399-0819

Japan Subsidiary

# TEXIO TECHNOLOGY CORPORATION.

7F Towa Fudosan Shin Yokohama Bldg., 2-18-13 Shin Yokohama, Kohoku-ku, Yokohama, Kanagawa, 222-0033 Japan T+81-45-620-2305 F+81-45-534-7181

#### GOOD WILL INSTRUMENT KOREA CO., LTD.

Room No.503, Gyeonginro 775 (Mullae-Dong 3Ga, Ace Hightech-City B/D 1Dong), Yeongduengpo-Gu, Seoul 150093, Korea T +82-2-3439-2205 F +82-2-3439-2207

India Subsidiary

#### GW INSTEK INDIA LLP.

No.2707/B&C, 1st Floor UNNATHI Building E-Block, Sahakara Nagar, Bengaluru-560 092. India T+91-80-6811-0600 F+91-80-6811-0626







