

AC POWER SOURCES

GW Instek AC Power Sources currently can be divided into three categories. Programmable AC/DC Power Source, Programmable AC Power Source, AC Power Source.

AC Power Source ASR-3000/ASR-2000 Series not only plays the role as a precision AC/DC power source but also a powerful analyzer. It contains abundant features for the testing and characteristic analysis of power supplies, electronic devices, components and modules.

The APS-7000 Series is programmable linear AC Power Source, with the height of 2U and output frequency range is 45~500Hz. The maximum rated output for APS-7050 is 500VA, 310Vrms, 4.2Arms and APS-7100 is 1000VA, 310Vrms, 8.4Arms. The APS-7000 Series comprises nine measurement and test functions and provides user interface similar to that of AC Power Meter.

PRODUCTS

- Programmable AC/DC Power Source
- Programmable AC Power Source
- AC Power Source

Ihr Distributor:

PLUG-IN
ELECTRONIC GMBH

AC POWER SOURCES

Programmable Switching AC/DC Power Source

GW Instek not only provides compact and lightweight switching AC/DC power sources but also features AC, DC and AC+DC power outputs and the real time measurements of Vrms, Vavg, Vpeak, Irms, IpkH, Iavg, Ipeak, P, S, Q, PF, CF, 40 th-order Voltage Harmonic and Current Harmonic. Four signal sources are collocated as Internal (INT), External (EXT), Internal+ External (ADD), and External Synchronization (SYNC) to flexibly output power so as to meet customers' demands. The powerful sequence function is very suitable for producing arbitrary waveforms. 16 sets of arbitrary waveform storage space and 10 sets of panel setting memory space are provided for data storage and setting input.

Linear AC Power Source

GW Instek recommends linear AC power source for AC power with the requirements of high accuracy, high stability and low ripple/noise. Programmable AC Power Source APS-7000 is suitable for simulating AC power outputs and it has 9 measurement functions (Vrms, Irms, F, Ipk, W, VA, PF, Ipk hold, CF), 7 waveform modes, Sequence mode, Simulate mode, and Surge/Dip Control Mode etc. Purpose AC power source applications, non-programmable AC source APS-7000E Series, with high precision and THD of less than 0.5%, is the ideal selection.

2K~4KVA PROGRAMMABLE SWITCHING AC/DC POWER SOURCE

Model	Output Capacity	Output Freq.	Output Voltage	Max. Current	Display Type	Weight(kg)	Page
ASR-3200	2KVA	1~999.9Hz	AC 100V Range 0.0V~200.0V AC 200V Range 0.0V~400.0V DC 100V Range -285V~+285V DC 200V Range -570V~+570V	AC 100V Range 20A AC 200V Range 10A DC 100V Range 20A DC 200V Range 10A	LCD	25	D67-72
ASR-3300	3KVA	1~999.9Hz	AC 100V Range 0.0V~200.0V AC 200V Range 0.0V~400.0V DC 100V Range -285V~+285V DC 200V Range -570V~+570V	AC 100V Range 30A AC 200V Range 15A DC 100V Range 30A DC 200V Range 15A	LCD	25	
ASR-3400	4KVA	1~999.9Hz	AC 100V Range 0.0V~200.0V AC 200V Range 0.0V~400.0V DC 100V Range -285V~+285V DC 200V Range -570V~+570V	AC 100V Range 40A AC 200V Range 20A DC 100V Range 40A DC 200V Range 20A	LCD	25	
ASR-3400HF	4KVA	1~5000Hz	AC 100V Range 0.0V~200.0V AC 200V Range 0.0V~400.0V DC 100V Range -285V~+285V DC 200V Range -570V~+570V	AC 100V Range 40A AC 200V Range 20A DC 100V Range 40A DC 200V Range 20A	LCD	25	

PROGRAMMABLE SWITCHING AC/DC POWER SOURCE

Model	Output Capacity	Output Freq.	Output Voltage	Max. Current	Display Type	Weight(kg)	Page
ASR-2050/ ASR-2050R	500VA	1~999.9Hz	AC 100V Range 0.0V~175.0V AC 200V Range 0.0V~350.0V DC 100V Range -250.0V~+250.0V DC 200V Range -500.0V~+500.0V	AC 100V Range 5A AC 200V Range 2.5A DC 100V Range 5A DC 200V Range 2.5A	LCD	11.5 ASR-2000 Series 10.5 ASR-2000R Series	D73-76
ASR-2100/ ASR-2100R	1000VA	1~999.9Hz	AC 100V Range 0.0V~175.0V AC 200V Range 0.0V~350.0V DC 100V Range -250.0V~+250.0V DC 200V Range -500.0V~+500.0V	AC 100V Range 10A AC 200V Range 5A DC 100V Range 10A DC 200V Range 5A	LCD	11.5 ASR-2000 Series 10.5 ASR-2000R Series	

PROGRAMMABLE LINEAR AC POWER SOURCE

Model	Output Capacity	Output Freq.	Output Voltage	Max. Current	Display Type	Weight(kg)	Page
APS-7050	500 VA	45~500Hz Option: 45~999.9Hz	0~310V, 0~155V Option: 0~600V	2.1A, 4.2A	LCD	24	D77-80
APS-7100	1000 VA	45~500Hz Option: 45~999.9Hz	0~310V, 0~155V Option: 0~600V	4.2A, 8.4A	LCD	38	
APS-7200	2000 VA	45~500Hz Option: 45~999.9Hz	0~310V, 0~155V Option: 0~600V	8.4A, 16.8A	LCD	90	
APS-7300	3000 VA	45~500Hz Option: 45~999.9Hz	0~310V, 0~155V Option: 0~600V	12.6A, 25.2A	LCD	128	

LINEAR AC POWER SOURCE

Model	Output Capacity	Output Freq.	Output Voltage	Max. Current	Display Type	Weight(kg)	Page
APS-7050E	500 VA	45~500Hz	0~310V, 0~155V	2.1A, 4.2A	LCD	24	D81-82
APS-7100E	1K VA	45~500Hz	0~310V, 0~155V	4.2A, 8.4A	LCD	38	

Programmable AC/DC Power Source



ASR-3000 Series

NEW



FEATURES

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

The ASR-3000 Series is an AC+DC power source, featuring high-speed DC voltage rising and falling time ($\leq 100\mu s$). There are four models of the series: ASR-3200(2kVA), ASR-3300(3kVA) and ASR-3400/3400HF (4kVA). The series can provide rated power output during AC output and DC output. Ten ASR-3000 Series output modes are available, including 1) AC power output mode (AC-INT Mode), 2) DC power output mode (DC-INT Mode), 3) AC/DC power output mode (AC+DC-INT Mode), 4) External AC signal source mode (AC-EXT Mode), 5) External AC/DC signal source mode (AC+DC-EXT Mode), 6) External AC signal superimposition mode (AC-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) 10) External DC voltage control of AC output mode(AC-VCA).

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

The ASR-3000 Series provides users with waveform output capabilities including 1) Sequence mode generates waveform fallings, surges, sags, changes and other abnormal power line conditions; 2) Arbitrary waveform function allows users to store/upload 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, 100th-order Voltage Harmonic and Current Harmonic. In addition, the remote sensing function ensures accurate voltage output, and the Customized Phase Angle for Output On/Off function can set the start and end angles of the voltage output according to the test requirements. The protection limits of V-Limit, Ipeak-Limit and F-Limit can be set according to user requirements. Over voltage limit, OCP, OPP will protect the DUT during the output process. The Fan Fail Alarm function and the AC fail alarm function are also designed in the ASR-3000 Series.

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

ASR-002 External three phase control unit



* Basis Requirement of ASR-002 to ASR-Series

1. Must be the three same models of ASR-Series
2. To ASR-2000 Series, the Opt01: RS-232+GPIB interface is required

* Functions of ASR-Series are limited when conducts to ASR-002

1. No DC Output
2. Measurement Items: only current(A), power(W) and PF for each phase
3. No Voltage and Current Harmonic Analysis
4. No Remote Sensing Capability
5. No Arbitrary Waveform Function
6. No Sequence and Simulation Function
7. Not supported External Control I/O
8. No memory Function
9. Only support USB, no LAN port for communication

GRA-442-J Rack Mount Adapter(JIS)



GRA-442-E Rack Mount Adapter(EIA)



GTL-137 Output power wire



APS-008 Air inlet filter



GPW-005 Power cord



GPW-006 Power cord



GPW-007 Power cord



SPECIFICATIONS			ASR-3200		ASR-3300		ASR-3400		ASR-3400HF		
INPUT RATING (AC)											
NOMINAL INPUT VOLTAGE			200 Vac to 240 Vac								
INPUT VOLTAGE RANGE			180 Vac to 264 Vac								
PHASE			Single phase, Two-wire								
NOMINAL INPUT FREQUENCY			50 Hz to 60 Hz								
INPUT FREQUENCY RANGE			47 Hz to 63 Hz								
MAX. POWER CONSUMPTION			2500 VA or less		3750 VA or less		5000 VA or less		5000 VA or less		
POWER FACTOR ^{*1}		200Vac	0.95 (TYP)								
MAX. INPUT CURRENT		200Vac	15 A		22.5 A		30 A		30 A		
^{*1} . For an output voltage of 100 V / 200 V (100V / 200V range), maximum current, and a load power factor of 1.											
AC MODE OUTPUT RATINGS (AC rms)											
VOLTAGE		Setting Range ^{*1}	0.0 V to 200.0 V / 0.0 V to 400.0 V								
		Setting Resolution	0.1 V								
		Accuracy ^{*2}	±(1 % of set + 1 V / 2 V)								
OUTPUT PHASE		Single phase, Two-wire									
MAXIMUM CURRENT ^{*3}		100 V	20 A		30 A		40 A		40 A		
		200 V	10 A		15 A		20 A		20 A		
MAXIMUM PEAK CURRENT ^{*4}		100 V	120 A		180 A		240 A		160 A		
		200 V	60 A		90 A		120 A		80 A		
LOAD POWER FACTOR			0 to 1 (leading phase or lagging phase)								
POWER CAPACITY			2000 VA		3000 VA		4000 VA		4000 VA		
FREQUENCY		Setting Range	AC Mode: 40.0 Hz to 999.9 Hz, AC+DC Mode: 1 Hz to 999.9 Hz							AC Mode: 40.0 Hz to 5000 Hz, AC+DC Mode: 1 Hz to 5000 Hz	
		Setting Resolution	0.01 Hz (1.00 to 99.99 Hz), 0.1 Hz (100.0 to 999.9 Hz)							0.01 Hz (1.00 to 99.99 Hz), 0.1 Hz (100.0 to 999.9 Hz) 1 Hz (1000 to 5000 Hz)	
		Accuracy	0.02% of set (23 °C ± 5 °C)								
		Stability ^{*5}	± 0.005%								
OUTPUT ON PHASE			0° to 359° variable (setting resolution 1°)								
DC OFFSET ^{*6}			Within ± 20 mV (TYP)								
^{*1} . 100 V / 200 V range.											
^{*2} . For an output voltage of 20 V to 200 V / 40 V to 400 V, an output frequency of 45 Hz to 65 Hz, no load, and 23 °C ± 5°C.											
^{*3} . For an output voltage of 1 V to 100 V / 2 V to 200 V. Limited by the power capacity when the output voltage is 100 V to 200 V / 200 V to 400 V.											
If there is the DC superimposition, the current of AC+DC mode satisfies the maximum current. In the case of lower than 40 Hz, and the power rating temperature, the maximum current will be decrease.											
^{*4} . With respect to the capacitor-input rectifying load. Limited by the maximum current.											
^{*5} . For 45 Hz to 65 Hz, the rated output voltage, no load and the resistance load for the maximum current, and the operating temperature.											
^{*6} . In the case of the AC mode and 23°C ± 5°C.											
OUTPUT RATING FOR DC MODE											
VOLTAGE		Setting Range ^{*1}	-285 V to +285 V / -570 V to +570 V								
		Setting Resolution	0.1 V								
		Accuracy ^{*2}	±(1 % of set + 1 V / 2 V)								
MAXIMUM CURRENT ^{*3}		100 V	20 A		30 A		40 A		40 A		
		200 V	10 A		15 A		20 A		20 A		
MAXIMUM PEAK CURRENT ^{*4}		100 V	120 A		180 A		240 A		160 A		
		200 V	60 A		90 A		120 A		80 A		
POWER CAPACITY			2000 W		3000 W		4000 W		4000 W		
^{*1} . 100 V / 200 V range.											
^{*2} . For an output voltage of -285 V to -28.5 V, +28.5 V to +285 V / -570 V to -57 V, +57 V to +570 V, no load, and 23 °C ± 5°C.											
^{*3} . For an output voltage of 1.4 V to 100 V / 2.8 V to 200 V. Limited by the power capacity when the output voltage is 100 V to 250 V / 200 V to 500 V.											
^{*4} . Limited by the maximum current.											
OUTPUT VOLTAGE STABILITY											
LINE REGULATION ^{*1}			0.2% or less								
LOAD REGULATION ^{*2}			0.5% or less (0 to 100%, via output terminal)								
RIPPLE NOISE ^{*3}			1 Vrms / 2 Vrms (TYP)								
^{*1} . Power source input voltage is 200 V, 220 V, or 240 V, no load, rated output.											
^{*2} . For an output voltage of 100 V to 200 V / 200 V to 400 V, a load power factor of 1, stepwise change from an output current of 0 A to maximum current (or its reverse), using the output terminal on the rear panel.											
^{*3} . For 5 Hz to 1 MHz components in DC mode using the output terminal on the rear panel.											
OUTPUT VOLTAGE WAVEFORM DISTORTION RATIO, OUTPUT VOLTAGE RESPONSE TIME, EFFICIENCY											
TOTAL HARMONIC DISTORTION(THD) ^{*1}			< 0.2% @50/60Hz < 0.3% @<500Hz < 0.5% @500.1Hz~999.9Hz							< 0.2% @50/60Hz < 0.5% @<500Hz < 1.0% @500.1Hz~2000Hz < 2.0% @2100Hz~5000Hz	
OUTPUT VOLTAGE RESPONSE TIME ^{*2}			100 μs (TYP)								
EFFICIENCY ^{*3}			80 % or more								
^{*1} . At an output voltage of 50 V to 200 V / 100 V to 400 V, a load power factor of 1, and in AC mode.											
^{*2} . For an output voltage of 100 V / 200 V, a load power factor of 1, with respect to stepwise change from an output current of 0 A to the maximum current (or its reverse).											
^{*3} . For AC mode, at an output voltage of 100 V / 200 V, maximum current, and load power factor of 1.											
MEASURED VALUE DISPLAY											
VOLTAGE		RMS, AVG Value ^{*1}	Resolution	0.1 V							
			Accuracy ^{*2}	For 45 Hz to 65 Hz and DC: ±(0.5 % of reading + 0.5 V / 1 V) For all other frequencies: ±(0.7 % of reading + 1 V / 2 V)							
		PEAK Value	Resolution	0.1 V							
			Accuracy	For 45 Hz to 65 Hz and DC: ±(2 % of reading) + 1 V / 2 V)							
CURRENT		RMS, AVG Value	Resolution	0.01 A							
			Accuracy ^{*3}	For 45 Hz to 65 Hz and DC: ±(0.5 % of reading+0.1 A/0.05 A) For all other frequencies: ±(0.7 % of reading+0.2 A/0.1 A)		For 45 Hz to 65 Hz and DC: ±(0.5 % of reading+0.15 A/0.08 A) For all other frequencies: ±(0.7 % of reading+0.3 A/0.15 A)		For 45 Hz to 65 Hz and DC: ±(0.5 % of reading+0.2 A/0.1 A) For all other frequencies: ±(0.7 % of reading+0.4 A/0.2 A)			
		PEAK Value	Resolution	0.1 A							
			Accuracy ^{*4}	For 45 Hz to 65 Hz and DC: ±(2 % of reading) + 0.5 A/0.25 A)		For 45 Hz to 65 Hz and DC: ±(2 % of reading) + 0.8 A/0.4 A)		For 45 Hz to 65 Hz and DC: ±(2 % of reading) + 1 A/0.5 A)			
POWER		Active (W)	Resolution	1 W							
			Accuracy ^{*5}	±(2 % of reading +2 W)		±(2 % of reading +3 W)		±(2 % of reading +4 W)			
		Apparent (VA)	Resolution	1 VA							
			Accuracy ^{*6}	±(2 % of reading +2 VA)		±(2 % of reading +3 VA)		±(2 % of reading +4 VA)			
		Reactive (VAR)	Resolution	1 VAR							
			Accuracy ^{*7}	±(2 % of reading +2 VAR)		±(2 % of reading +3 VAR)		±(2 % of reading +4 VAR)			
LOAD POWER FACTOR			Range	0.000 to 1.000							
			Resolution	0.001							
LOAD CREST FACTOR			Range	0.00 to 50.00							
			Resolution	0.01							
HARMONIC VOLTAGE			Range	Up to 100th order of the fundamental wave							
EFFECTIVE VALUE (RMS)			Full Scale	200 V / 400 V, 100%							
PERCENT (%)			Resolution	0.1 V, 0.1%							
(AC-INT and 50/60 Hz only)			Accuracy ^{*8}	Up to 20th : ±(0.2 % of reading + 0.5 V / 1 V) 20th to 100th : ±(0.3 % of reading + 0.5 V / 1 V)							

Programmable AC/DC Power Source



Rear Panel



ASR-3000 Series

SPECIFICATIONS					
		ASR-3200	ASR-3300	ASR-3400	ASR-3400HF
HARMONIC CURRENT EFFECTIVE VALUE (RMS) PERCENT (%) (AC-INT and 50/60 Hz only)	Range	Up to 100th order of the fundamental wave			
	Full Scale	20 A / 10 A, 100%		30 A / 15 A, 100%	
	Resolution	0.01 A, 0.1%			
	Accuracy ^{*3}	Up to 20th ±(1 % of reading+0.4 A/0.2 A) 20th to 100th ±(1.5 % of reading+0.4 A/0.2 A)		Up to 20th ±(1 % of reading+0.6 A/0.3 A) 20th to 100th ±(1.5 % of reading+0.6 A/0.3 A)	
				Up to 20th ±(1 % of reading+0.8 A/0.4 A) 20th to 100th ±(1.5 % of reading+0.8 A/0.4 A)	
^{*1} The voltage display is set to RMS in AC/AC+DC mode and AVG in DC mode.					
^{*2} AC mode: For an output voltage of 20 V to 200 V / 40 V to 400 V and 23 °C ± 5 °C. DC mode: For an output voltage of 28.5 V to 285 V / 57 V to 570 V and 23 °C ± 5 °C.					
^{*3} An output current in the range of 5 % to 100 % of the maximum current, and 23 °C ± 5 °C.					
^{*4} An output current in the range of 5 % to 100 % of the maximum peak current in AC mode, an output current in the range of 5 % to 100 % of the maximum instantaneous current in DC mode, and 23 °C ± 5 °C. The accuracy of the peak value is for a waveform of DC or sine wave.					
^{*5} For an output voltage of 50 V or greater, an output current in the range of 10 % to 100 % of the maximum current, DC or an output frequency of 45 Hz to 65 Hz, and 23 °C ± 5 °C.					
^{*6} The apparent and reactive powers are not displayed in the DC mode.					
^{*7} The reactive power is for the load with the power factor 0.5 or lower.					
^{*8} An output voltage in the range of 20 V to 200 V / 40 V to 400 V and 23 °C ± 5 °C.					
OTHERS					
PROTECTIONS		UVP, OCP, OTP, OPP, Fan Fail			
DISPLAY		TFT-LCD, 4.3 inch			
MEMORY FUNCTION		Store and recall settings, Basic settings: 10 (0-9 numeric keys)			
ARBITRARY WAVE	Number of Memories	16 (nonvolatile)			
	Waveform Length	4096 words			
INTERFACE	Standard	USB	Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB-CDC, USB-TMC		
		LAN	MAC Address, DNS IP Address, User Password, Gateway IP Address, Instrument IP Address, Subnet Mask		
		RS-232C	Complies with the EIA-RS-232 specifications		
		EXT Control	External Signal Input; External Control I/O		
		GPIO	SCPI-1993, IEEE 488.2 compliant interface		
INSULATION RESISTANCE		500 Vdc, 30 MΩ or more			
Between input and chassis, output and chassis, input and output					
WITHSTAND VOLTAGE		1500 Vac, 1 minute			
Between input and chassis, output and chassis, input and output					
EMC		EN 61326-1, EN 61326-2-1, EN 61000-3-2, EN 61000-3-3, EN 61000-3-11, EN 61000-3-12 EN 61000-4-2/-4-3/-4-4/-4-5/-4-6/-4-8/-4-11/-4-34, EN 55011 (Class A), EN 55032			
SAFETY		EN 61010-1			
ENVIRONMENT	Operating Environment	Indoor use, Overvoltage Category II			
	Operating Temperature Range	0 °C to 40 °C			
	Storage Temperature Range	-10 °C to 70 °C			
	Operating Humidity Range	20 % to 80 % RH (no condensation)			
	Storage Humidity Range	90 % RH or less (no condensation)			
Altitude		Up to 2000 m			
DIMENSIONS & WEIGHT		430(W)×176(H)×530(D) mm (not including protrusions): Approx. 25kg			

ORDERING INFORMATION

ASR-3200	2kVA Programmable AC/DC Power Source
ASR-3300	3kVA Programmable AC/DC Power Source
ASR-3400	4kVA Programmable AC/DC Power Source
ASR-3400HF	4kVA Programmable AC/DC Power Source

ACCESSORIES :

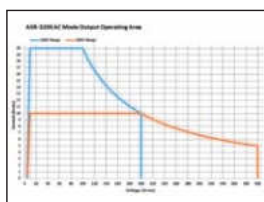
CD (User manual/Programming manual), Safety guide, Input Terminal Cover, Output terminal cover include remote sensing, GRA-442-E Rack mount adapter(EIA), GTL-246 USB Cable

OPTIONAL ACCESSORIES

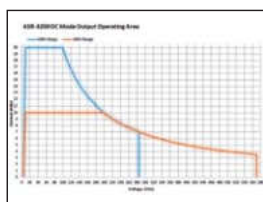
GPW-005	Power cord, 3m, 105°C, UL/CSA type	GTL-232	RS232C Cable, approx. 2m
GPW-006	Power cord, 3m, 105°C, VDE type	GTL-248	GPIO Cable, approx. 2m
GPW-007	Power cord, 3m, 105°C, PSE type	ASR-002	External three phase control unit for IP2W, IP3W, 3P4W output
GRA-442-J	Rack mount adapter (JIS)	APS-008	Air inlet filter
GRA-442-E	Rack mount adapter (EIA)		
GTL-137	Output power wire(load wire_10AWG:50A, 600V/sense wire_16AWG:20A, 600V)		

* European output outlet(factory installed)

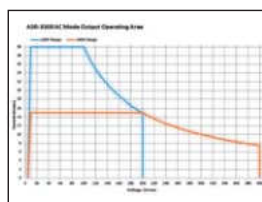
A. OPERATING AREA FOR ASR-3000 SERIES



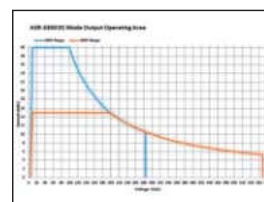
AC Output for ASR-3200



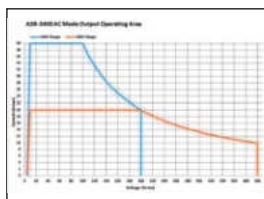
DC Output for ASR-3200



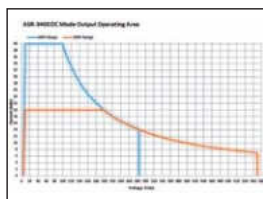
AC Output for ASR-3300



DC Output for ASR-3300



AC Output for ASR-3400



DC Output for ASR-3400

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.

B. MEASUREMENT ITEMS FOR ASR-3000 SERIES



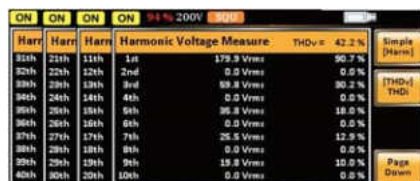
RMS Meas Display



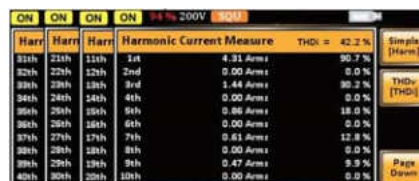
AVG Meas Display



Peak Meas Display



Voltage Harmonic



Current Harmonic

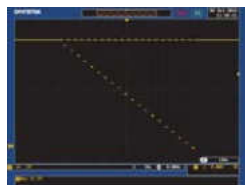
The ASR-3000 Series provides users with measurement capabilities including Vrms, Vavg, Vpeak, Irms, Iavg, Ipeak, IpkH, P, S, Q, PF, CF, 100th-order Voltage Harmonic and Current Harmonic. During the power output, the measurement

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.

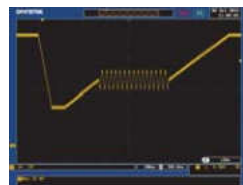
C. SEQUENCE MODE AND BUILT-IN ISO-16750-2 WAVEFORMS



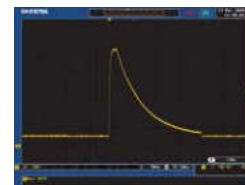
SEQ6: Momentary Drop in Supply Voltage



SEQ7: Reset Behavior at Voltage Drop with 12V System



SEQ8: Starting Profile Waveform



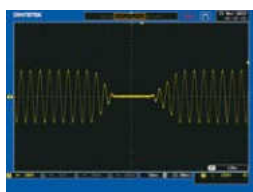
SEQ9: Load Dump with Tr_10ms, Td_40ms

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.

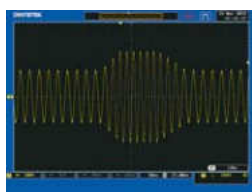
In addition, ASR-3000 Series also built in common ISO-16750-2 test waveforms in the Sequence Mode preset waveforms, including Momentary Drop in Supply Voltage built in at SEQ6, Reset Behavior at Voltage Drop with 12V system built in at SEQ7, Starting Profile Waveform built in at SEQ8 and Load Dump with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

Programmable AC/DC Power Source

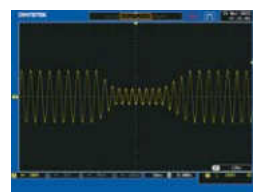
D. SIMULATE MODE



Power Outage



Voltage Rise



Voltage Fall

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.

E. FUNCTION WAVEFORM (ARBITRARY EDIT) MODE



TRI Waveform



STAIR Waveform



CLIP Waveform



SURGE Waveform

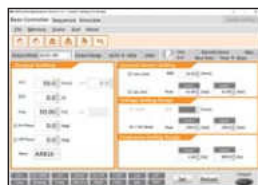


Fourier Series Synthesized Waveform

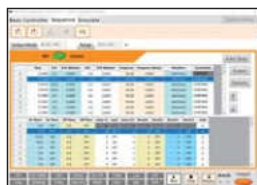
ASR-3000 Series provides more than 20,000 waveform combinations in seven categories, allowing users to quickly simulate different AC voltage waveforms. Adjust the desired waveform type directly through the panel (displayed synchronously on the screen),

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.

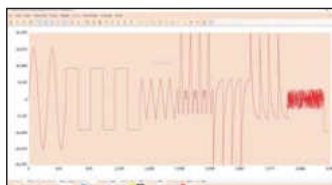
F. PC SOFTWARE



Basic Controller



Sequence Mode



ARB Waveform Edit



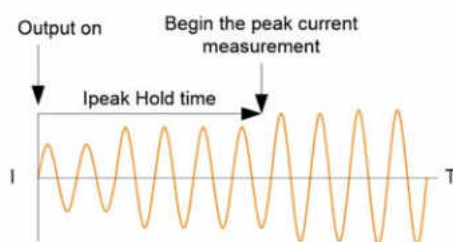
The Waveform is Observed with DSO

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 users to draw arbitrary waveforms and output them.

G. T, Ipk HOLD & Ipk, HOLD FUNCTIONS

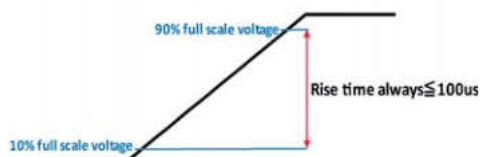


T, Ipk Measurement

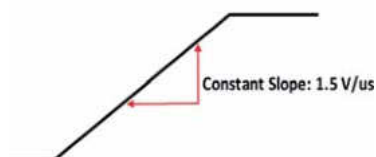
T, Ipk Hold is used to set the delay time after the output (1ms ~ 60,000ms) to capture the Ipeak value and keep the maximum value. The update only functions when the measurement value is greater than the original value. The T, Ipk Hold delay time setting can be used to measure surge current at the power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

H. 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.

Compact Programmable A.C./D.C. Power Source



ASR-2050/2100 Series



ASR-2050R/2100R Series



FEATURES

- * Output Rating: AC 0 ~ 350 Vrms, DC 0 ~ ± 500 V
- * Output Frequency up to 999.9 Hz
- * DC Output (100% of Rated Power)
- * Output Capacity: 500VA/1000VA
- * Measurement Items: Vrms, Vavg, Vpeak, Irms, IpkH, Iavg, Ipeak, P, S, Q, PF, CF
- * Voltage and Current Harmonic Analysis (THDv, THDi)
- * Customized Phase Angle for Output On/Off
- * Remote Sensing Capability
- * OVP, OCP, OPP, OTP, AC Fail Detection and Fan Fail Alarm
- * Interface: USB, LAN, RS-232(std.); GPIB(opt.)
- * Built-in External Control I/O and External Signal Input
- * Built-in Output Relay Control
- * Memory Function (up to 10 sets)
- * Sequence and Simulation Function (up to 10 sets)
- * Support Arbitrary Waveform Function
- * Built-in Web Server

GET-003 Universal Extended Terminal Box (ASR-2000R only)



GET-004 Euro Extended Terminal Box (ASR-2000R only)



The ASR-2000 series, an AC+DC power source aiming for system integration or desktop applications, provides both rated power output for AC output and rated power output for DC output. Ten ASR-2000 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), 10) External DC voltage control of AC output mode (AC-VCA).

The ASR-2000 series provides users with waveform output capabilities to meet the test requirements of different electronic component development, automotive electrical devices and home appliance, 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-2000 series power source outputs, it can also measure Vrms, Vavg, Vpeak, Irms, Iavg, Ipeak, IpkH, P, S, Q, PF, CF, 100th-order Voltage Harmonic and Current Harmonic. In addition, the Remote sense function ensures accurate voltage output. The Customized Phase Angle for Output On/Off function can set the starting angle and ending angle of the voltage output according to the test requirements. V-Limit, Ipeak-Limit, F-Limit, OVP, OCP, OPP function settings can protect the DUT during the measurement process. In addition to OTP, OCP, and OPP protection, the ASR-2000 series also incorporates the Fan fail alarm function and AC fail alarm function.

The front panel of the ASR-2050/2100 provides a universal socket or a European socket, which allows users to plug and use so as to save wiring time. The ASR-2050R/2100R is 3U height and 1/2 Rack width design, which is compatible with ATS assembly. The ASR-2000 series supports I/O interface and is equipped with USB, LAN, External I/O and optional RS-232C and GPIB.

SPECIFICATIONS

		ASR-2050/ASR-2050R	ASR-2100/ASR-2100R
INPUT RATING (AC)			
NOMINAL INPUT VOLTAGE		100 Vac to 240 Vac	100 Vac to 240 Vac
INPUT VOLTAGE RANGE		90 Vac to 264 Vac	90 Vac to 264 Vac
PHASE		Single phase, Two-wire	Single phase, Two-wire
INPUT FREQUENCY RANGE		47 Hz to 63 Hz	47 Hz to 63 Hz
MAX. POWER CONSUMPTION		800 VA or less	1500 VA or less
POWER FACTOR ^{*1}		100Vac 200Vac	0.95 (typ.) 0.95 (typ.)
MAX. INPUT CURRENT		100Vac 200Vac	0.90 (typ.) 0.90 (typ.)
		8 A 4 A	15 A 7.5 A
*1. For an output voltage of 100 V/200 V (100V/200V range), maximum current, and a load power factor of 1.			
AC MODE OUTPUT RATINGS (AC rms)			
VOLTAGE		Setting Range ^{*1} Setting Resolution Accuracy ^{*2}	0.0 V to 175.0 V / 0.0 V to 350.0 V 0.1 V ±(0.5 % of set + 0.6 V / 1.2 V)
OUTPUT PHASE		Single phase, Two-wire	
MAXIMUM CURRENT ^{*3}		100 V 200 V	5 A 2.5 A
MAXIMUM PEAK CURRENT ^{*4}		100 V 200 V	10 A 5 A
POWER CAPACITY		20 A 10 A	
FREQUENCY		Setting Range Setting Resolution Accuracy Stability ^{*5}	500 VA 1000 VA
OUTPUT ON PHASE		AC Mode: 40.00 Hz to 999.9 Hz, AC+DC Mode: 1.00 Hz to 999.9 Hz 0.01 Hz (1.00 to 99.99 Hz), 0.1 Hz (100.0 to 999.9 Hz) For 45 Hz to 65 Hz: 0.01% of set, For 40 Hz to 999.9 Hz: 0.02% of set ± 0.005%	
DC OFFSET ^{*6}		0.0° to 359.9° variable (setting resolution 0.1°) Within ± 20 mV (TYP)	
*1. 100 V / 200 V range			
*2. For an output voltage of 175.0 V to 175 V / 35 V to 350 V, sine wave, an output frequency of 45 Hz to 65 Hz, no load, DC voltage setting 0V (AC+DC mode) and 23°C ± 5°C			
*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 175 V / 200 V to 350 V.			
*4. With respect to the capacitor-input rectifying load. Limited by the maximum current.			
*5. For 45 Hz to 65 Hz, the rated output voltage, no load and the resistance load for the maximum current, and the operating temperature.			
*6. In the case of the AC mode and output voltage setting to 0 V.			
OUTPUT RATING FOR DC MODE			
VOLTAGE		Setting Range ^{*1} Setting Resolution Accuracy ^{*2}	-250 V to +250 V / -500 V to +500 V 0.1 V ±(0.5 % of set) + 0.6 V / 1.2 V)
MAXIMUM CURRENT ^{*3}		100 V 200 V	5 A 2.5 A
MAXIMUM PEAK CURRENT ^{*4}		100 V 200 V	10 A 5 A
POWER CAPACITY		20 A 10 A	
		500 W 1000 W	40 A 20 A
*1. 100 V / 200 V range			
*2. For an output voltage of -250 V to -25 V, +25 V to +250 V / -500 V to -50 V, +50 V to +500 V, no load, AC voltage setting 0V (AC+DC mode) and 23°C ± 5°C			
*3. For an output voltage of 1.4 V to 100 V / 2.8 V to 200 V, Limited by the power capacity when the output voltage is 100 V to 250 V / 200 V to 500 V.			
*4. Within 5 ms, Limited by the maximum current.			
OUTPUT VOLTAGE STABILITY			
LINE REGULATION ^{*1}		±0.2% or less	
LOAD REGULATION ^{*2}		±0.15% @45-65Hz;±0.5% @DC,all other frequencies(0~100%, via output terminal)	
RIPPLE NOISE ^{*3}		0.7 Vrms / 1.4 Vrms (TYP)	
*1. Power source input voltage is 100 V, 120 V, or 230 V, no load, rated output.			
*2. For an output voltage of 75 V to 175V/150V to 350V, a load power factor of 1, stepwise change from an output current of 0 A to maximum current (or its reverse), using the output terminal on the rear panel.			
*3. For 5 Hz to 1 MHz components in DC mode using the output terminal on the rear panel.			
OUTPUT VOLTAGE WAVEFORM DISTORTION RATIO, OUTPUT VOLTAGE RESPONSE TIME, EFFICIENCY			
TOTAL HARMONIC DISTORTION(THD) ^{*1}		≤ 0.2% @50/60Hz, ≤ 0.3% @<500Hz, ≤ 0.5% @500.1Hz~999.9Hz	
OUTPUT VOLTAGE RESPONSE TIME ^{*2}		100 μs (TYP)	
EFFICIENCY ^{*3}		70 % or more	
*1. At an output voltage of 50 V to 175 V / 100 V to 350 V, a load power factor of 1, and in AC and AC+DC mode.			
*2. For an output voltage of 100 V / 200 V, a load power factor of 1, with respect to stepwise change from an output current of 0 A to the maximum current (or its reverse); 10% ~ 90% of output voltage			
*3. For AC mode, at an output voltage of 100 V / 200 V, maximum current, and load power factor of 1 and sine wave only.			
MEASURED VALUE DISPLAY			
VOLTAGE RMS, AVG Value ^{*1}		Resolution Accuracy ^{*2}	0.1 V For 45 Hz to 65 Hz and DC: ±(0.5 % of reading + 0.3 V/0.6 V) For 40 Hz to 999.9 Hz: ±(0.7 % of reading + 0.9 V/1.8 V)
PEAK Value		Resolution Accuracy	0.1 V For 45 Hz to 65 Hz and DC: ±(2 % of reading) + 1 V / 2 V)
CURRENT RMS, AVG Value		Resolution Accuracy ^{*3}	0.01 A For 45 Hz to 65 Hz and DC: ±(0.5 % of reading+0.02 A/0.02 A); For 40 Hz to 999.9 Hz: ±(0.7 % of reading + 0.04 A / 0.04 A)
			0.01 A For 45 Hz to 65 Hz and DC: ±(0.5 % of reading+0.04 A/0.02 A); For 40 Hz to 999.9 Hz: ±(0.7 % of reading + 0.08 A / 0.04 A)



ASR-2000 Series

SPECIFICATIONS			ASR-2050/ASR-2050R	ASR-2100/ASR-2100R
POWER	PEAK Value	Resolution Accuracy ^{*4}	0.01 A For 45 Hz to 65 Hz and DC: ±[(2 % of reading)+0.2 A/0.1 A)	0.01 A For 45 Hz to 65 Hz and DC: ±[(2 % of reading)+0.2 A/0.1 A)
	Active (W)	Resolution Accuracy ^{*5}	0.1 / 1 W ±(2 % of reading + 0.5 W)	0.1 / 1 W ±(2 % of reading + 1 W)
	Apparent (VA)	Resolution Accuracy ^{*5*}	0.1 / 1 VA ±(2 % of reading + 0.5 VA)	0.1 / 1 VA ±(2 % of reading + 1 VA)
	Reactive (VAR)	Resolution Accuracy ^{*5*}	0.1 / 1 VAR ±(2 % of reading + 0.5 VAR)	0.1 / 1 VAR ±(2 % of reading + 1 VAR)
LOAD POWER FACTOR	Range	Resolution	0.000 to 1.000	0.000 to 1.000
		Resolution	0.001	0.001
LOAD CREST FACTOR	Range	Resolution	0.00 to 50.00	0.00 to 50.00
		Resolution	0.01	0.01
HARMONIC VOLTAGE	Range	Resolution	Up to 100th order of the fundamental wave	Up to 100th order of the fundamental wave
		Resolution	175 V / 350 V, 100%	175 V / 350 V, 100%
EFFECTIVE VALUE (RMS)	Full Scale	Resolution	0.1 V, 0.1%	0.1 V, 0.1%
		Accuracy ^{*8}	Up to 20th±(0.2% of reading + 0.5V/1V); 20th to 100th±(0.3% of reading + 0.5V/1V)	Up to 20th±(0.2% of reading + 0.5V/1V); 20th to 100th±(0.3% of reading + 0.5V/1V)
PERCENT (%)	Resolution	Accuracy ^{*8}	Up to 100th order of the fundamental wave	Up to 100th order of the fundamental wave
		Accuracy ^{*8}	5 A / 2.5 A, 100%	10 A / 5 A, 100%
HARMONIC CURRENT	Range	Resolution	0.01 A, 0.1%	0.01 A, 0.1%
		Accuracy ^{*3}	Up to 20th±(1% of reading + 0.1A/0.05 A); 20th to 100th±(1.5% of reading + 0.1A/0.05A)	Up to 20th±(1% of reading + 0.2A/0.1A); 20th to 100th±(1.5% of reading + 0.2A/0.1A)
EFFECTIVE VALUE (RMS)	Full Scale	Resolution	0.01 A, 0.1%	0.01 A, 0.1%
		Accuracy ^{*3}	Up to 20th±(1% of reading + 0.1A/0.05 A); 20th to 100th±(1.5% of reading + 0.1A/0.05A)	Up to 20th±(1% of reading + 0.2A/0.1A); 20th to 100th±(1.5% of reading + 0.2A/0.1A)
PERCENT (%)	Resolution	Accuracy ^{*3}	Up to 20th±(1% of reading + 0.1A/0.05 A); 20th to 100th±(1.5% of reading + 0.1A/0.05A)	Up to 20th±(1% of reading + 0.2A/0.1A); 20th to 100th±(1.5% of reading + 0.2A/0.1A)
		Accuracy ^{*3}	Up to 20th±(1% of reading + 0.1A/0.05 A); 20th to 100th±(1.5% of reading + 0.1A/0.05A)	Up to 20th±(1% of reading + 0.2A/0.1A); 20th to 100th±(1.5% of reading + 0.2A/0.1A)
*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 17.5V to 175V/35V to 350V and 23°C±5 °C. DC mode:For an output voltage of 25V to 250V/50V to 500V 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 current in AC mode, an output current in the range of 5 % to 100 % of the maximum instantaneous current in DC mode, and 23 °C ± 5 °C. The accuracy of the peak value is for a waveform of DC or sine wave. *5. For an output voltage of 50V or greater, an output current in the range of 10 % to 100 % of the maximum current,DC or an output frequency of 45Hz to 65Hz, 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 17.5 V to 175 V/35 V to 350 V and 23 °C ± 5 °C.				
OTHERS				
PROTECTIONS			OCP, OTP, OPP, FAN Fail	
DISPLAY			TFT-LCD, 4.3 inch	
MEMORY FUNCTION			10 sets for Store and Recall settings	
ARBITRARY WAVE	Number of Memories	Waveform Length	16 (nonvolatile)	
		Waveform Length	4096 words	
INTERFACE	Standard	USB	Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB-CDC	
		LAN	MAC Address, DNS IP Address, User Password, Gateway IP Address, Instrument IP Address, Subnet Mask	
	Optional	RS-232C	Complies with the EIA-RS-232 specifications	
		EXT Control GPIB	External Signal Input; External Control I/O	
INSULATION RESISTANCE			SCPI-1993, IEEE 488.2 compliant interface	
Between input and chassis, output and chassis, input and output			500 Vdc, 30 MΩ or more	
WITHSTAND VOLTAGE			1500 Vac, 1 minute	
Between input and chassis, output and chassis, input and output			EN 61326-1 (Class A);EN 61326-2-1/-2-2 (Class A);EN 61000-3-2 (Class A, Group 1);EN 61000-3-3 (Class A, Group 1);EN 61000-4-2/-4-3/-4-4/-4-5/-4-6/-4-8/-4-11 (Class A, Group 1);EN 55011 (Class A, Group1);EN 61010-1	
EMC			Indoor use, Overvoltage Category II	
Safety	Operating Environment		0 °C to 40 °C	
Environment	Operating Temperature Range		-10 °C to 70 °C	
	Storage Temperature Range		20 % RH to 80 % RH (no condensation)	
	Operating Humidity Range		90 % RH or less (no condensation)	
	Storage Humidity Range		Up to 2000 m	
Altitude			ASR-2000 : 285(W)×124(H)×480(D) (not including protrusions); Approx. 11.5 kg	
DIMENSIONS & WEIGHT			ASR-2000R : 213(W)×124(H)×480(D) (not including protrusions); Approx. 10.5 kg	

ORDERING INFORMATION

ASR-2050	500VA Programmable AC/DC Power Source
ASR-2100	1000VA Programmable AC/DC Power Source
ASR-2050R	500VA Programmable AC/DC Power Source for 3U 1/2 Rack Mount
ASR-2100R	1000VA Programmable AC/DC Power Source for 3U 1/2 Rack Mount

ACCESSORIES :

CD ROM (User Manual, Programming manual), Safety Guide, Power Cord, Mains Terminal Cover Set, Remote Sense Terminal Cover Set, GTL-123 Test Lead, GTL-246 USB Cable

OPTIONAL ACCESSORIES

ASR-GPIB-2K	Optional GPIB Interface for ASR-2000 (Factory installed)	GRA-439-E	Rack Mount Kit (EIA)
ASR-EU-2K	European Output Outlet only for ASR-2000 (Factory installed)	GRA-439-J	Rack Mount Kit (JIS)
GET-003	Extended Universal Power Socket (ASR-2000R only)	GTL-232	RS-232C Cable, approx. 2M
GET-004	Extended European Power Socket (ASR-2000R only)	GTL-258	GPIB Cable, approx. 2M, including 25 pins Micro-D connector
ASR-001	Air inlet filter		
ASR-002	External three phase control unit for IP2W, IP3W, 3P4W output		

FREE DOWNLOAD

USB Driver

Note : GET-003/GET-004 are not CE approved.

ASR-2050/2100 Rear Panel



ASR-2050R/2100R Rear Panel



GRA-439-J/E Rack Mount Kit (JIS/EIA)

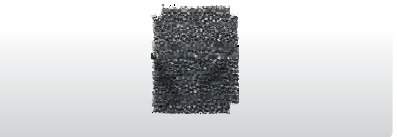
For : ASR-2000 Series



GTL-258 GPIB Cable, 2000mm



ASR-001 Air Inlet Filter



ASR-002 External three phase control unit

* Basis Requirement of ASR-002 to ASR-Series

1. Must be the three same models of ASR-Series
2. To ASR-2000 Series, the Opt01: RS-232+GPIB interface is required

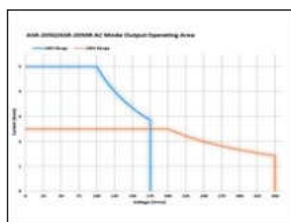
* Functions of ASR-Series are limited when conducts to ASR-002

1. No DC Output
2. Measurement Items: only current(A), power(W) and PF for each phase
3. No Voltage and Current Harmonic Analysis
4. No Remote Sensing Capability
5. No Arbitrary Waveform Function
6. No Sequence and Simulation Function
7. Not supported External Control I/O
8. No memory Function
9. Only support USB, no LAN port for communication

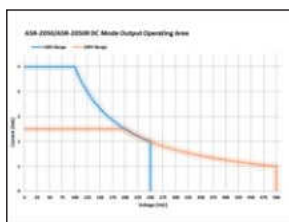


Compact Programmable A.C./D.C. Power Source

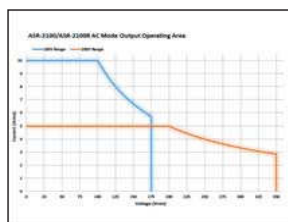
A. OPERATING AREA FOR ASR-2000 SERIES



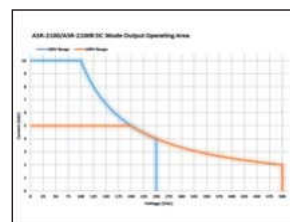
AC Output for
ASR-2050/ASR-2050R



DC Output for
ASR-2050/ASR-2050R



AC Output for
ASR-2100/ASR-2100R



DC Output for
ASR-2100/ASR-2100R

The ASR-2000 series is an AC+DC power source that provides rated power output not only at the AC output, but also at the DC output. The operation areas are shown in diagrams.

Model Name	Power Rating	Max. Output Current	Max. Output Voltage
ASR-2050	500 VA	5 / 2.5 A	350 Vrms / 500 Vdc
ASR-2100	1000 VA	10 / 5 A	350 Vrms / 500 Vdc
ASR-2050R	500 VA	5 / 2.5 A	350 Vrms / 500 Vdc
ASR-2100R	1000 VA	10 / 5 A	350 Vrms / 500 Vdc

B. MEASUREMENT ITEMS FOR ASR-2000 SERIES



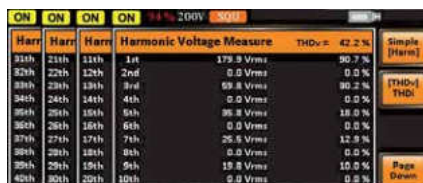
RMS Meas Display



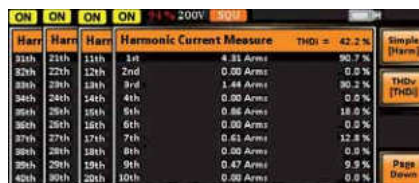
AVG Meas Display



Peak Meas Display



Voltage Harmonic

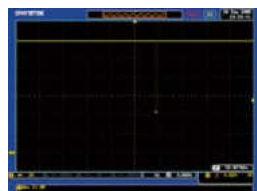


Current Harmonic

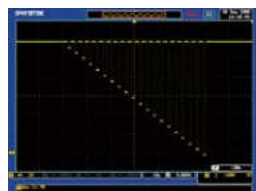
The ASR-2000 series provides users with measurement capabilities including Vrms, Vavg, Vpeak, Irms, Iavg, Ipeak, IpkH, P, S, Q, PF, CF, 40th-order Voltage Harmonic and Current Harmonic. During the power output, the measurement

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.

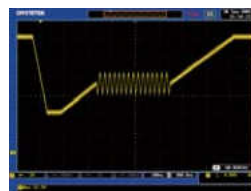
C. SEQUENCE MODE AND APPLICATIONS



Momentary Drop in Supply Voltage



Reset Behavior at Voltage Drop



Starting Profile Waveform

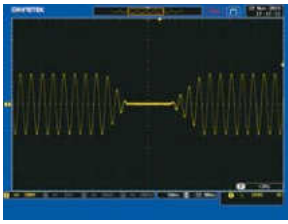


Instantaneous Power Failure

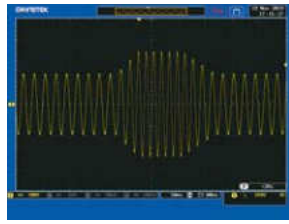
There are 10 sets of Sequence mode and each set has 0~999 steps. The time setting range of each step is 0.0001 ~ 999.9999 seconds. Users can combine multiple sets of steps to generate

the desired waveforms, including waveform fallings, surges, sags, changes and other abnormal power line conditions to meet the needs of the test application.

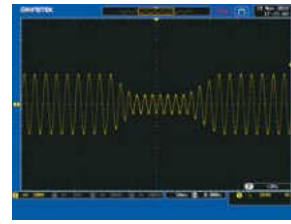
D. SIMULATE MODE



Power Outage



Voltage Rise

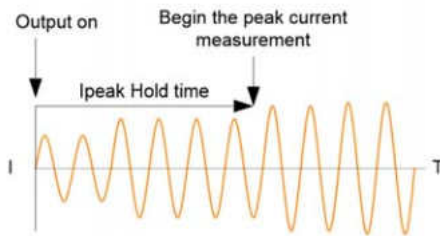


Voltage Fall

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.

E. T, IPK HOLD & IPK, HOLD FUNCTIONS

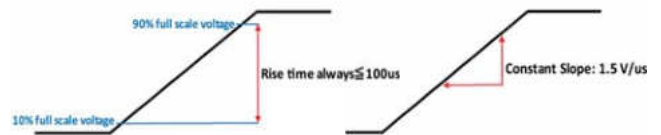


T, IpK Measurement

T, IpK Hold is used to set the delay time after the output (1ms ~ 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.

F. SLEW RATE MODE



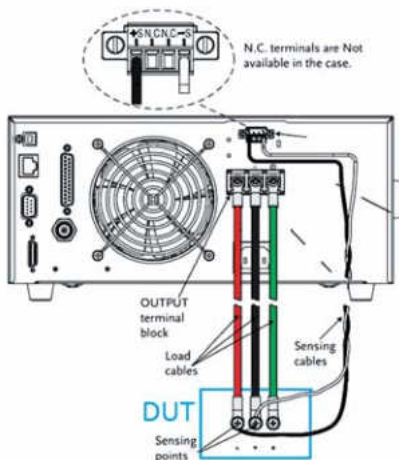
Time Mode

Slope Mode

The ASR-2000 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-2000 can increase output to 10~90% of the set voltage within 100μs; and when selecting "Slope" mode, ASR-2000 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-2000 series voltage by editing the Sequence mode.

G. REMOTE SENSE FUNCTION



For high current output applications, the voltage drop caused by large current passing through the load cables will affect the measurement results. The ASR-2000 series provides the remote sense function that can sense the voltage drop of the DUT to the ASR-2000 series and the DUT will be compensated by the ASR-2000 series. The maximum voltage that the remote sense function can compensate is 5% of the output voltage.

500/1000/2000/3000 VA Programmable Linear AC Power Source



APS-7050



APS-7100



FEATURES

- * 4.3-inch TFT-LCD
- * **Output Capacity:**APS-7050(500VA,310Vrms,4.2Arms); APS-7100(1000VA,310Vrms,8.4Arms);APS-7200(2000VA, 310Vrms,16.8Arms);APS-7300(3000VA,310Vrms,25.2Arms)
- * **Output Augmentation by Options**(0~600Vrms/45~999.9Hz)
- * **Low Ripple & Noise**
- * **Measurement and Test Functions Include** VOLT, CURR, PWR, SVA, IPK, IPKH, FREQ, PF, CF
- * **Support a Small AC Current Measurement** 2mA ~35A, Min. Resolution 0.01mA(APS-7050&APS-7100)
- * **Reverse Current Alarm Function**
- * **10 sets of Sequence Function to Edit Output Waveforms/10 sets of Simulate Mode to Rapidly Simulate Transient Power Supply/10 sets of Program Mode to Define Measurement Sequence/10 sets of Panel Memory Function**
- * **Automatic Execution of Sequence, Simulate, Program mode and Output Function when the Power is on**
- * **Standard Interfaces:**USB Host,USB Device,LAN
- * **Optional Interfaces:**GPIB(APS-001);RS-232/USB CDC(APS-002 for APS-7050&APS-7100 only)RS-232 (APS-007 for APS-7200& APS-7300 only)

APS-001/APS-002 Interface Card



APS-003

Output Voltage Capacity

APS-004

Output Frequency Capacity



APS-007 RS-232 Interface Card

For: APS-7200 Series, APS-7300 Series



GWInstek introduces APS-7000 series programmable AC power sources, which consists of 500VA of APS-7050, 1000VA of APS-7100, 2000VA of APS-7200 and 3000VA of APS-7300. APS-7000 series features power characteristics from its linear structure design including low noise, low THD, and highly stabilized power output that are ideal for the product development and verification of input power with low noise requirement or stereo, video and audio device applications, etc. The maximum rated voltage is 0~310Vrms, 25.2Arms, 100.8A peak current and the output frequency range is 45~500.0Hz. Users can conveniently augment the output voltage from 0Vrms to 600Vrms and output frequency from 45Hz to 999.9Hz by purchasing options without sending equipment back to GW Instek.

One of the popular alternative energy solutions in the market is to utilize inverter to convert DC to AC and the converted AC is then sent to power grid or products require electricity. For instance, AC produced by PV inverter is sent to power grid or equipment requires electricity. While simulating power grid to verify inverter connecting with power grid, general AC power sources cannot withstand DUT's feedback energy, hence, additional power consumption resistors are needed to prevent AC power source from being damaged. On the contrary, APS-7000 series has the characteristic of absorbing reverse current so that additional power consumption resistors are not required. The input terminal of APS-7000 series is designed to isolate from the simulated AC power grid output terminal, therefore, users do not need an additional isolation device to protect DUT. APS-7000 series is suitable for simulating power grid and conducting inverter output characteristic tests, including synchronized phase and frequency. Reverse current and power detected by APS-7000 series will be displayed in red readings to facilitate user's test observation. APS-7000 series utilizes Simulate mode and Sequence mode to provide a single step or consecutive power changes; and to simulate power grid's Voltage Abnormality Test and Frequency Abnormality Test.

APS-7000 series comprises nine measurement and test functions (Vrms, Irms, F, Ipk, W, VA, PF, Ipk hold, CF), and provides user interface similar to that of AC Power Meter. APS-7000 series is ideal for the LED industry and standby mode power consumption test. Under the ARB mode, APS-7000 series provides waveforms in seven categories including Sine waveform, Triangle waveform, Staircase waveform (Square wave), Clipped Sinewave, Crest factor waveform, Surge waveform, and Fourier series and 20,000 waveform combinations so as to meet the requirements of simulating abnormal input power waveform test of various industries. Ten Preset settings allow users to store ten sets of data; Power ON Output setting allows Sequence, Simulate, and Program to automatically execute output after the equipment power is on.

To meet the test criteria of line voltage fluctuation often seen in consumer electronics, APS-7000 series features five methods to cope with special purpose or abnormal voltage, frequency, and phase; ten sets of the Simulate mode simulate power outage, voltage rise, and voltage fall; ten sets of the Sequence mode allow users to define parameters and produce sine wave by editing steps; ten sets of the Program mode can edit AC waveform output and define the ceiling and floor level of measurement items for different DUTs; Ramp Control allows users to set the variation speed for output voltage rise and fall; Surge/Dip Control simulates DUT's input power producing a Surge or Dip voltage overlapping with output voltage waveform at a specific time. For larger current output applications, voltage drop across the output cables should be avoided. APS-7200/7300 also provide the remote sense function, which senses DUT's voltage and sends the information back to APS-7200/7300 for program controlled voltage compensation. Therefore, APS-7200/7300 can avoid the voltage drop of the cable to affect output voltage.

Ethernet Port, on the rear panel, can be used for remote program control; Sync Output Socket provides external 10V sync output; Signal Output Connector provides monitor of Program execution results. APS-7000 series also provides users with Trigger In/Out and Output on/off remote control functions from J1 connector on the rear panel.

SPECIFICATIONS

Model		APS-7050	APS-7100	APS-7200	APS-7300
AC OUTPUT					
Power Rating		500VA	1000VA	2000VA	3000VA
Output Voltage		0 ~ 155Vrms, 0 ~ 310Vrms	0 ~ 155Vrms, 0 ~ 310Vrms	0 ~ 155Vrms, 0 ~ 310Vrms	0 ~ 155Vrms, 0 ~ 310Vrms
Output Frequency		45.00 ~ 500.0 Hz	45.00 ~ 500.0 Hz	45.00 ~ 500.0 Hz	45.00 ~ 500.0 Hz
Maximum	0~155Vrms	4.2A	8.4A	16.8A	25.2A
Current(r.m.s)*1	0~310Vrms	2.1A	4.2A	8.4A	12.6A
Maximum	0~155Vrms	16.8A	33.6A	67.2A	100.8A
Current(peak)	0~310Vrms	8.4A	16.8A	33.6A	50.4A
OPT. APS-003(rms)	0~600Vrms	1.05A	2.1A	4.2A	6.3A
OPT. APS-003(peak)	0~600Vrms	4.2A	8.4A	16.8A	25.2A
Total Harmonic Distortion (THD)*2		≤0.5% at 45 ~ 500Hz (Resistive Load)			
Crest Factor		≤4			
Line Regulation		0.1% (% of full scale)			
Load Regulation		0.3% (% of full scale)			
Response Time		<100μs			
Reverse Current		30% of Maximum Output RMS Current (Continue); 100% of Maximum Output RMS Current (Within 3 minutes)			
SETTING					
Voltage	Range Resolution Accuracy	0~155Vrms, 0~310Vrms, Auto 0.01V at 0.00 ~ 99.99Vrms; 0.1V at 100.0 ~ 310.0Vrms ±(0.5% of setting+2 counts)			
Frequency	Range Resolution Accuracy	45 ~ 500Hz 0.01Hz at 45.00 ~ 99.99Hz; 0.1Hz at 100.0 ~ 500.0Hz ±0.02% of setting			
Power On/Off	Range	0 ~ 359°			
Phase Angle	Resolution Accuracy	1° ±1° (45 ~ 65Hz)			
MEASUREMENT*3					
Voltage(RMS)	Range Resolution	0.20~38.75Vrms;38.76~77.50Vrms; 77.51~155.0Vrms;155.1~310.0Vrms 0.01V at 0.00 ~ 99.99Vrms; 0.1V at 100.0 ~ 310.0Vrms		0.20~38.75Vrms;38.76~77.50Vrms; 77.51~155.0Vrms;155.1~310.0Vrms 0.01V at 0.00 ~ 99.99Vrms; 0.1V at 100.0 ~ 310.0Vrms	
Frequency	Accuracy*4 Range Resolution	±(0.5% of reading + 2 counts) 45 ~ 500Hz 0.01Hz at 45Hz~99.99Hz; 0.1Hz at 100Hz~500.0Hz ±0.1Hz		±(0.5% of reading + 2 counts) 45 ~ 500Hz 0.01Hz at 45Hz~99.99Hz; 0.1Hz at 100Hz~500.0Hz ±0.1Hz	
Current(RMS)	Accuracy Range Resolution Accuracy	2.00 ~ 70.00mA;60.0 ~ 350.0mA; 0.300 ~ 3.500A;3.00 ~ 17.5A 0.01mA, 0.1mA, 0.001A, 0.01A ±(0.6% of reading+5 counts);2.00~350.0mA; ±(0.5% of reading+5 counts);0.300~3.500A; ±(0.5% of reading+3 counts);3.000~17.50A		0.200 ~ 3.500A;3.00~35.00A 0.001A;0.01A ±(0.5% of reading+5 counts);0.200~3.500A ±(0.5% of reading+3 counts);3.00~35.00A	



APS-7200



APS-7300

SPECIFICATIONS

Model		APS-7050	APS-7100	APS-7200	APS-7300
Current(Peak)	Range	0.0 ~ 70.0A		0.0 ~ 140.0A	
	Resolution	0.1A		0.1A	
Power(W)	Accuracy	±(1% of reading+1 count)		± 1% of reading+1 count)	
	Resolution	0.01W, 0.1W, 1W		0.1W, 1W	
Apparent(VA)	Accuracy	±(0.6% of reading+5 counts),0.20~99.99W; ±(0.6% of reading+5 counts),100.0~999.9W; ±(0.6% of reading+2 counts),1000~9999W		±(0.6% of reading+5counts),0.2~999.9W; ±(0.6% of reading+2counts),1000~9999W	
	Resolution	0.01VA, 0.1VA, 1VA		0.1VA, 1VA	
Power Factor	Accuracy	±(1% of reading+7 counts),0.20~99.99VA; ±(1% of reading+7 counts),100.0~999.9VA; ±(1% of reading+5 counts),1000~9999VA		±(1% of reading+7 counts),0.2~999.9VA; ±(1% of reading+5 counts),1000~9999VA	
	Resolution	0.001		0.001	
	Accuracy	±(2% of reading + 2 counts)		±(2% of reading+2 counts)	
GENERAL					
Remote output signal		Pass, Fail, Test-in Process, Trigger in, Trigger out, OUT ON/OFF			
Sync output signal		Output Signal 10 V, BNC Type			
Number of Preset		10 (0~9 numeric keys)			
Protection		OCP, OPP, OTP and Alarm			
Trigger Out		Maximum low level output = 0.8V ; Minimum high level output = 2V ; Maximum source current = 8mA			
Trigger In		Maximum low level input voltage = 0.8V ; Minimum high level input voltage = 2.0V; Maximum sink current = 8mA			
SEQUENCE/SIMULATION FUNCTION					
Number of Memories		10 (0 ~ 9 Numeric keys)			
Number of Steps		255 max. (For 1 sequence)			
Step Time Setting Range		0.01 ~ 999.99s			
Operation Within Step		Constant, Keep, Linear Sweep			
Parameters		Output Range, Frequency, Waveform (sine wave only); On Phase, Off Phase, Term			
Sequence Control		Jump Count (0 ~ 255) jump-to, Branch 1, Branch 2, Trigger Output			
		Start, Stop, Hold, Continue, Branch 1, Branch 2			
AC INPUT					
Phase	Single Phase	Single Phase	Single Phase	Single Phase	
Input Voltage	115/230Vac±15%	115/230Vac±15%	230Vac±15%	230Vac±15%	
Input Frequency	50/60Hz	50/60Hz	50/60Hz	50/60Hz	
Max. Current	16A/8A	32A/16A	32A	50A	
Power Factor	0.7Typ.	0.7Typ.	0.7Typ.	0.7Typ.	
Power Consumption	1.8kVA or less	3.6kVA or less	7.2kVA or less	10.8kVA or less	
ENVIRONMENT CONDITIONS					
Operating Temperature Range		0 ~ +40℃			
Storage Temperature Range		-10 ~ +70℃			
Operating Humidity Range		20 ~ 80% RH (No Condensation)			
Storage Humidity Range		80% RH or less(No Condensation)			
INTERFACE					
Standard	USB Host, LAN		USB Host, USB CDC, LAN		
Optional	GPIB (APS-001)		GPIB (APS-001)		
	RS232 / USB CDC (APS-002)		RS232 (APS-007)		
DIMENSIONS & WEICHT					
	430(W) x 88(H) x 400(D) mm; Approx. 24kg	430(W) x 88(H) x 560(D) mm; Approx. 38kg	430(W) x 312(H) x 650(D) mm; Approx. 90kg	430(W) x 400(H) x 650(D) mm; Approx. 128kg	

ORDERING INFORMATION

APS-7050 500VA Programmable AC Power Source

APS-7100 1000VA Programmable AC Power Source

APS-7200 2000VA Programmable AC Power Source

APS-7300 3000VA Programmable AC Power Source

ACCESSORIES :

CD ROM(User Manual, Programming Manual for APS-7000) x 1, Power Cord(Region Dependent), GTL-123 Test Lead

OPTIONAL ACCESSORIES

APS-001 GPIB interface card

APS-002 RS-232/USB interface card(APS-7050, APS-7100)

APS-007 RS-232 interface card(APS-7200, APS-7300)

APS-003 Output Voltage Capacity(0~600Vrms)

APS-004 Output Frequency Capacity(45~999.9Hz)

GRA-423 APS-7050, APS-7100 rack mount kit

GRA-429 Rack mount kit (APS-7200)

GRA-430 Rack mount kit (APS-7300)

Note : 1. APS-7200/APS-7300 are not CE approved.

2. The minimum time settings of sequence mode or simulate mode must be greater than 1 cycle of the waveform itself.

APS-7300 Rear Panel



APS-7200 Rear Panel



APS-7100 Rear Panel



APS-7050 Rear Panel



APS-7000 Series

Europe Type Output Outlet



Note:

The Specifications are not suit for ARB mode.

*1. Maximum output current at working voltage 120Vrms, 240Vrms

*2. 45~500Hz, 10% or higher of the rated output voltage, the maximum current or lower

*3. All of measurement accuracy is at 23±5°C

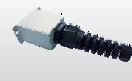
*4. In the case of 15~155V, 30~310V, sine wave, no load

Mains Terminal Cover Set

For: APS-7100/7100E Series

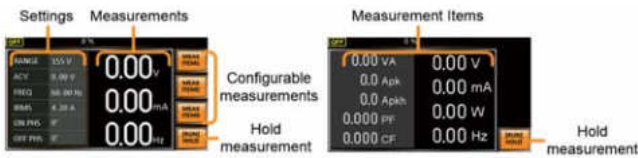


For: APS-7050/7050E Series



500/1000/2000/3000 VA Programmable Linear AC Power Source

A. CONTROL PANEL CHARACTERISTICS



Standard Mode

There are two control panel modes: Standard mode and Simple mode. Both modes are shown on the above. Standard mode combines settings and AC Power Meter measurement window display. Users apply Function key (F1~F3) to select required measurement items. There are nine items for selection. Simple mode shows all measurement items on the display.

Simple Mode

B. REVERSE CURRENT DISPLAY

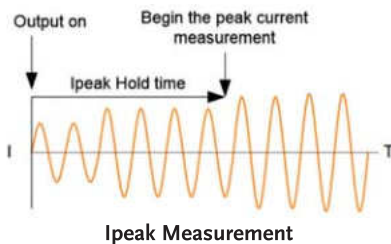


Standard Mode

When output terminal detects 180 degree phase difference between voltage and current (reverse current), the front panel of APS-7000 Series will remind users the power and power factor measurement results in red numerical display. This feature can be applied to show the power and power factor measurement while testing inverter for feedback power grid. As shown on the above : APS-7000 Series can withstand reverse current: 30% of the maximum effective current or maximum current output within three minutes.

Simple Mode

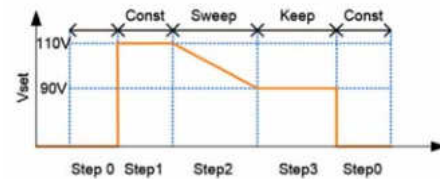
C. T IPEAK, HOLD FUNCTION



Ipeak Measurement

T, Ipk Hold sets delay time (1ms~60 seconds) for measurement after the output of Ipeak value and the maximum value will be retrieved. Update will be proceeded only if measured value is greater than the original value. Ipk Hold is for measuring transient inrush current as soon as the equipment power is on that is usually done by oscilloscope and current probe. T, Ipk Hold delay time setting can be applied to measure inrush current of sequentially activated DUT.

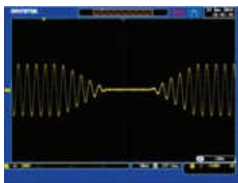
D. SEQUENCE MODE



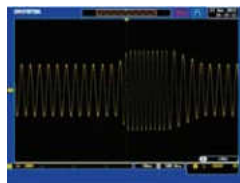
Sequence Mode

There are ten sets of Sequence mode and each set has 0~255 steps. The time setting range for each step is 0.01 ~ 999.99 seconds. Combining many sets of steps to edit required waveforms can satisfy users' requirement of highly complicated waveforms.

E. SIMULATE MODE



Power Outage



Voltage Rise

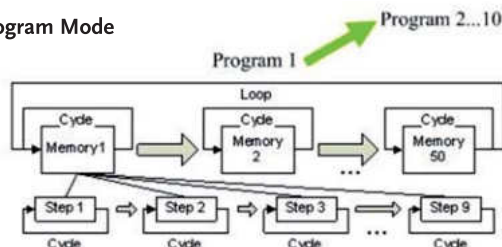


Voltage Fall

This mode can rapidly produce different simulated input transient waveforms such as power outage; voltage rise and voltage fall etc. for engineers to evaluate the impact on DUT posed by the transient phenomena. For instance, capacitor endurance test.

F. PROGRAM MODE

Program Mode



This mode allows users to set ceiling and floor specifications to produce PASS/FAIL result after the measurement is done. It can also show test results for each test procedure or only show the last result.

There are ten sets of Program mode and each set has 50 sets of memory. Each memory comprises 9 steps. Each Program will operate according to memory sequence, self-defined loops or designated steps to stop.

G SURGE/DIP CONTROL



Surge

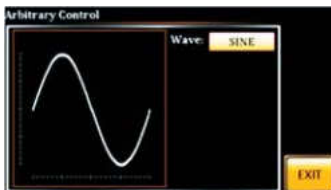


Dip

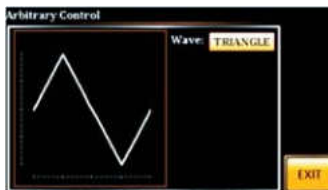
Overlapping a Surge/Dip voltage on a normal voltage as the input power for DUT allows users to simulate Surge/Dip situation and evaluate DUT characteristics.

H. FUNCTION WAVEFORM (ARB) MODE

Provide waveforms in seven categories and 20,000 waveform combinations so as to rapidly simulate distorted AC voltage waveforms.



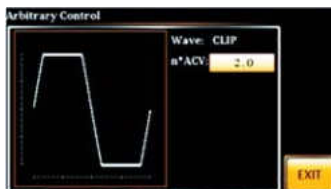
Sine Waveform
Standard AC Waveform



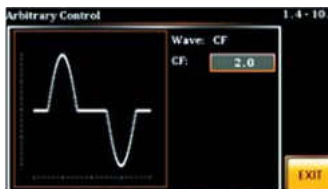
Triangle Waveform
Power Harmonic Output Simulation
Is Triangle Waveform



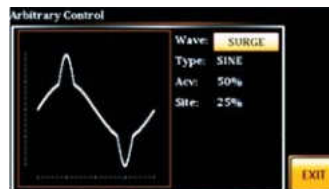
Staircase Waveform
Simulate Square Waveform And Staircase
Waveform For Commercial Ups



Clipped Sinewave
Simulate Grid Power Supply Heavy
Load Waveform



Crest Factor Waveform
Simulate Rectified Filter Current
Waveform By Capacitor Input



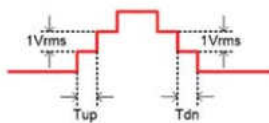
Surge Waveform
Simulate Grid Power Supply's
Peak Over-voltage



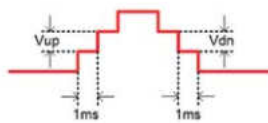
Fourier Series Synthesized Waveform

Simulate real output power waveform. Distorted power waveform is produced due to output impedance and non-linear effect such as inductance, capacitance, and parasitic capacitance effect. For example: motors.

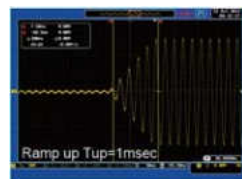
I. RAMP CONTROL



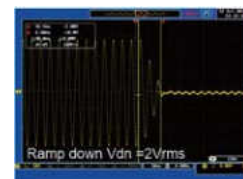
$T_{up} \rightarrow 0.1 \sim 999.9\text{ms}$
 $T_{dn} \rightarrow 0.1 \sim 999.9\text{ms}$



$V_{up} \rightarrow 0.01 \sim 99.99\text{ Vrms}$
 $V_{dn} \rightarrow 0.01 \sim 99.99\text{ Vrms}$



Mode=Time, $T_{up}=1\text{msec}$,
 $V_{AC}=100\text{V}$, Freq=50Hz,
Ramp output=on.



Mode=Voltage, $V_{dn}=2\text{Vrms}$,
 $V_{AC}=100\text{V}$, Freq=50Hz,
Ramp output=off.

Ramp control allows users to set output voltage rise or fall speed which is based on time (1ms) or voltage (1Vrms) unit.

500/1000 VA AC Power Source



APS-7050E



APS-7100E



FEATURES

- * 4.3" large LCD Display
- * Output Capacity:
APS-7050E (500VA, 310Vrms, 4.2/2.1Arms)
APS-7100E (1000VA, 310Vrms, 8.4/4.2Arms)
- * Measurement Function :
Voltage, Current, Power, Frequency, Power Factor, Ipeak
- * Reverse Current Alarm Function
- * 10 Sets of The Test Mode Simulate Power Transient Output
- * 10 Sets of Preset Allow Users to Store Ten Settings
- * OCP/OPP/OTP Protection
- * Variable Voltage, Frequency and Current Limiter
- * Universal Power Inlet

GW Instek launches the APS-7000E series the economy version of the APS-7000 programmable AC power source. With the height of 2U, the maximum rated output for APS-7050E is 500VA, 310Vrms, 4.2Arms and APS-7100E is 1000VA, 310Vrms, 8.4Arms. The output frequency range of the series is 45~500Hz. The series is ideal for the test and development of DC power supply devices, consumer electronics, automotive electronics and electronic components.

The APS-7000E series comprises six measurement and test functions (Vrms, Irms, F, Ipk, W, PF), and provides user interface similar to that of AC Power Meter. The APS-7000E series, via switching many sets of current levels to increase small current measurement resolution, is ideal for the LED industry and standby mode power consumption test. Ten sets of Preset allow users to store ten settings.

To meet the test criteria of line voltage fluctuation often seen in consumer electronics, the APS-7000E series not only provides a stable AC power source but also features the Test mode to satisfy special or abnormal voltage and frequency variation demands. Ten sets of the Test mode simulate power outage, voltage rise, and voltage fall. The APS-7000E series that simulates waveforms of city power grid's transient changes is suitable for verifying electronics products operated under abnormal power source.

The APS-7000E series is the economy version of the APS-7000 series. If communications interface and larger voltage/frequency are required, please refer to the APS-7000 series.

SPECIFICATIONS

Model		APS-7050E	APS-7100E
Power Rating		500VA	1000VA
Output Voltage		0 ~ 155Vrms/0 ~ 310.0 Vrms	0 ~ 155Vrms/0 ~ 310.0 Vrms
Output Frequency		45.00 ~ 500.0 Hz	45.00 ~ 500.0 Hz
Maximum Current (r.m.s)	0~155Vrms	4.2A	8.4A
	0~310Vrms	2.1A	4.2A
Maximum Current (peak)	0~155Vrms	16.8A	33.6A
	0~310Vrms	8.4A	16.8A
Total Harmonic Distortion (THD)		≤0.5% at 45 ~ 500Hz (Resistive Load)	
Crest Factor		≤4	
Line Regulation		0.1% (% of full scale)	
Load Regulation		0.3% (% of full scale)	
Response Time		<100μs	
Reverse Current		30% of Maximum Output RMS Current (Continue); 100% of Maximum Output RMS Current (Within 3 minutes)	
SETTING			
Voltage	Range	0 ~ 155Vrms/0 ~ 310Vrms/Auto	
	Resolution	0.01V at 0.00 ~ 99.99Vrms; 0.1V at 100.0 ~ 310.0Vrms	
Frequency	Accuracy	±(0.5% of setting+2 counts)	
	Range	45 ~ 500Hz	
	Resolution	0.01Hz at 45.00 ~ 99.99Hz/0.1Hz at 100.0 ~ 500.0Hz	
	Accuracy	±0.02% of setting	
MEASUREMENT			
Voltage(RMS)	Range	0.20~38.75Vrms/38.76~77.50 Vrms/77.51~155.0Vrms/155.1~310.0Vrms	
	Resolution	0.01V at 0.00 ~ 99.99Vrms; 0.1V at 100.0 ~ 310.0Vrms	
Frequency	Accuracy	±(0.5% of reading + 2 counts)	
	Range	45 ~ 500Hz	
	Resolution	0.01Hz (at 45Hz~99.99Hz)/0.1Hz (at 100Hz~500.0Hz)	
	Accuracy	±0.1Hz	
Current(RMS)	Range	2.00 ~ 70.00mA/60.0 ~ 350.0mA/0.300 ~ 3.500A/3.00 ~ 17.5A	
	Resolution	0.01mA, 0.1mA, 0.001A, 0.01A	
	Accuracy	±(0.6% of reading+5 counts); 2.00~350.0mA/±(0.5% of reading+5 counts); 0.350~3.500A/±(0.5% of reading+3 counts); 3.500~17.50A	
Current(Peak)	Range	0.0 ~ 70.0A	
	Resolution	0.1A	
	Accuracy	±(1% of reading+1 count)	
Power(W)	Resolution	0.01W, 0.1W, 1W	
	Accuracy	±(0.6% of reading+5 counts); 0.20~99.99W; ±(0.6% of reading+5 counts); 100.0~999.9W ±(0.6% of reading+2 counts); 1000~9999W	
	Accuracy	0.001	
Power Factor	Resolution	0.001	
	Accuracy	±(2% of reading + 2 counts)	
GENERAL			
Number of Preset		10(0~9 Numeric keys)	
Protection		OCP, OPP, OTP and Alarm	



APS-7050E



APS-7100E

APS-7050E Rear Panel



APS-7100E Rear Panel



SPECIFICATIONS		
Model	APS-7050E	APS-7100E
ENVIRONMENT CONDITIONS		
Operation Temperature	0 ~ +40℃	
Storage Temperature	-10 ~ +70℃	
Operating Temperature	20 ~ 80% RH (No Condensation)	
Storage Humidity	80% RH or less(No Condensation)	
AC INPUT		
Input Power Source	1Φ AC 115/230Vac ±15%	
DIMENSIONS & WEICHT		
	430(W) x 88(H) x 400(D) mm; Approx. 24kg	430(W) x 88(H) x 560(D) mm; Approx. 38kg

ORDERING INFORMATION

APS-7050E 500VA AC Power Source
APS-7100E 1000VA AC Power Source

ACCESSORIES :
 CD ROM (User Manual) x 1, Power Cord (Region Dependent), Mains Terminal Cover Set,
 GTL-123 Test Lead

OPTIONAL ASSESSORIES

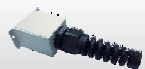
GRA-423 Rack Mount Kit (APS-7000E Series)

Mains Terminal Cover Set

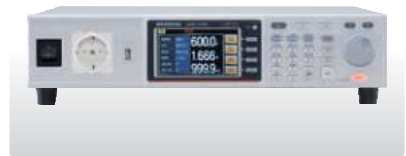
For: APS-7100/7100E Series



For: APS-7050/7050E Series



APS-7000E Series Europe Type Output Outlet



Haben Sie Fragen?

Ihr Distributor hilft Ihnen gerne weiter:



Telefon +49 (0) 81 41 . 36 97 - 0

E-Mail info@plug-in.de

Am Sonnenlicht 5
D-82239 Alling bei München

WWW.PLUG-IN.DE
