

# **ASR-6000 Series**

4.5kVA/6kVA/9kVA/12kVA/13.5kVA/18kVA High-Performance AC/DC Power Supply

# **FEATURES**

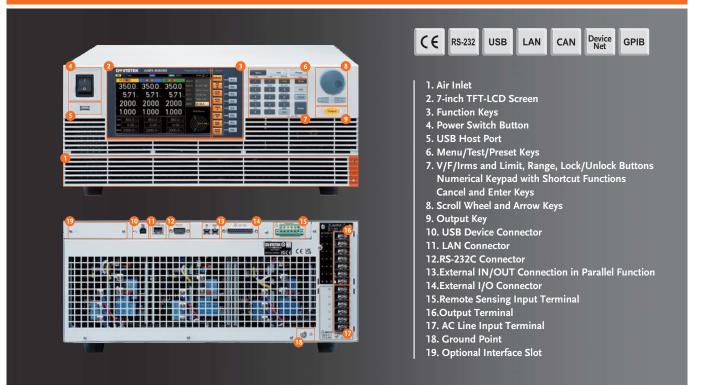
- Adopts Third-generation Semiconductor Silicon Carbide (SiC) Technology to Create a 4U 6kVA High-performance AC/DC Power Source with High Power Density
- AC Input Supports Single-phase and Three-phase, Phase Voltage 200V to 240V±10% (Delta or Y Connection)
- 10 output Modes: Including External Input Signal Frequency and Mains Synchronization(SYNC), External Voltage Controlled Internal Amplifier Output (VCA)
- Multi-channel Output Function
- Supports AC 1P2W, 1P3W, 3P4W Output
- AC Maximum Output Phase Voltage: 350Vrms Line Voltage: 700Vrms
- AC Balanced and Unbalanced Three-phase, Phase Failure Output Functions
- Programmable Output Impedance Adjustment
- Dual-channel Voltage/Current Output Monitoring Function
- Voltage Output Rise Time Can be Adjusted in Three Ranges
- Supports Sequence Editing and Emulation Output Mode
- Powerful Arbitrary Waveform Editing and Output Function, Built-in Over 253 Types of Arbitrary Waveform Outputs
- Advanced Web Server Control to Support Data Acquisition and Data Logger Both Functions
- 100th Order Harmonic Measurement Function
- Support Parallel Connection Type Up to 18kVA/18kW Maximum
- Interfaces: RS-232C, USB, LAN; Opt: CAN BUS, DeviceNet, GPIB



From the very moment Alpha Go defeated the human chess champion with its ultra-high-speed computing capability, artificial intelligence technology (AI) has developed rapidly around the world. Today, servers with advanced AI functions process tremendous amounts of data under the high-speed computing architecture of 2 CPUs + 8 GPUs. servers require a huge amount of power to maintain high-speed computing! In order to meet this demand, the power, density and efficiency of server power supplies have been greatly improved. High-power server power modules require high-efficiency conversion and saving of power consumption. AC single-phase input, HVDC 400V input or increased DC voltage output designs can be utilized to achieve this purpose. In order to ensure power stability when high-power servers are operating, power modules with hot-swappable redundant power supply specifications (such as CRPS) have been widely applied in server racks. Power modules with redundant functions require testing of multiple power modules at a time to ensure that all modules can maintain normal operation during high power output. Due to the rapid changes in the development of server power supplies GW Instek developed the brand new flagship model ASR-6000 series to meet customer needs. ASR-6000 series series has two models - ASR-6450 AC/DC 4.5kVA and ASR-6600 series AC/DC 6kVA.

ASR-6000 series is the first stand-alone unit from GW Instek that supports AC single/three-phase input and output, and has rated DC power output. The series employs third-generation semiconductor silicon carbide (SiC) technology to create a 4U 6kVA high power density and high-performance AC/DC power source ASR-6000 series has the ability to emulate more diverse power environment changes, such as balanced three-phase and unbalanced three-phase, phase failure, and features multi-channel output function in three-phase output mode, programmable output impedance adjustment, and up to tens of thousands of arbitrary waveform outputs. The invincible launch of GW Instek flagship model ASR-6000 series demonstrates that GW Instek can provide a complete test solution for high-power AC sources. ASR-6000 series is the MVP of GW Instek power sources.

### PANEL INTRODUCTION





## ASR-6450-13.5/6600-18 (Three units)

### ASR-6450-09/6600-12 (Two units)

U U

### SINGLE UNIT PROVIDES AC SINGLE/THREE-PHASE INPUT FUNCTION Α.



that supports AC single/three-phase input.

AC One-phase Input

The ASR-6000 series is GW Instek's first programmable AC/DC power source

a .ASR-6000 can use mains in most countries around the world (ex. Mainland

China, Southeast. Asia, India, Europe...)AC single-phase 220V input can help

test software development engineers work with the ASR-6000 on mains in the

AC three-phase input supports delta (Delta) and star (Y) wiring methods

AC Three-phase Input (Delta Connection)

AC Three-phase Input (Y Connection)

b. ASR-6000 can be used immediately in various regions around the world and is not affected by differences in power grids in different countries.

Note: 1. The AC input three-phase Y connection method must be connected to the N wire, otherwise the ASR-6000 cannot be turned on. 2. ASR-6000 AC voltage input range AC 200V ~ AC240V.

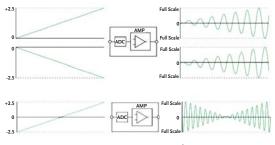
### Β. **10 OUTPUT MODES**

Advantages:



office. No additional three-phase power source is required.

ASR-6000 Has 10 Output Modes





Output Phase	Output Mode		Signal Source					
	1.000	INT	EXT	ADD	Sync.	VCA		
1P	AC+DC	AC+DC-INT	AC+DC-EXT	AC+DC-ADO	AC+DC-Sync.	N/A		
	AC	AC-INT	AC-EXT	AC-ADD	AC-Sync.	AC-VCA		
	DC	DC-INT	N/A	N/A	N/A	N/A		
1P3W	AC+DC	AC+DC-INT	AC+DC-EXT	AC+DC-ADD	AC+DC-Sync.	N/A		
	AC	AC-INT	AC-EXT	AC-ADD	AC-Sync.	AC-VCA		
	DC .	DC-INT	M/A	N/A	N/A	11/A		
39	AC+DC	AC+DC-INT	AC+DC-EXT	AC+DC-ADD	AC+DC-Sync.	11/A		
	AC	AC-INT	AC-EXT	AC-ADD	AC-Sync.	AC-VCA		
	DC	DC-INT	N/A	N/A	N/A	N/A		

AC+DC-INT AC & DC Internal output AC-INT AC Internal output DC-INT DC Internal output
 AC+DC-EXT AC & DC External output

- AC+DC-ADD AC & DC Additional output AC-ADD AC Additional output
- AC+DC-Sync AC & DC Synchronal output
   AC-Sync AC Synchronal output
- AC-VCA AC Voltage Control Amplifier output

AC-EXT AC External output A high-performance AC power source = amplifier + signal source

It has: internal output + external input signal to control internal output + amplify external input signal. and output, and other diversified output functions. ASR-6000 has up to 10 output modes, including :

1.Internal output (INT)

2.External input controls internal output (EXT)

3.Sum output of external and internal signal sources (ADD)

4. Mains frequency synchronous output (SYNC)

5. External DC signal controls internal AC amplitude (VCA)

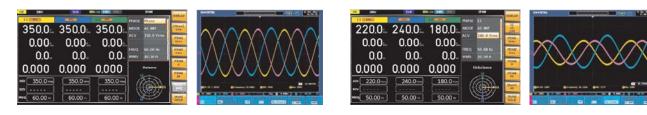
### AC SINGLE/THREE-PHASE OUTPUT + MULTI-CHANNEL OUTPUT FUNCTION

	SAR!	DINE (THE	Some Xame
11080	12(100)	13(6840)	PHASE EE
3500	350.0	3500	MORE ACIDE INT
			40V 158.9 View
4.29	4.29	4.29	EX.V +0.00 VM
1500	1500	1500	181.0 2000.0 Hr
			1.05 A
1.000	1.000	1.000	Unbalance
av 350.0-	350.0	350.0-	
ev 0.00-	0.00-	0.00	
HG 2000.0 -	2000.0 -	2000.0 -	

The ASR-6000 series has diverse output functions, including three modes: 1P2W, 1P3W and 3P4W. The maximum output for phase voltage is 350Vrms and the maximum output for line voltage is 700Vrms.

In AC three-phase output (3P4W) mode, each phase supports independent output settings. Taking ASR-6600 as an example, The maximum output of each phase reaches 2kVA, supporting power supply testing of up to three DUTs to meet the needs of server power modules, Testing requirements for high-power AC power products such as electric vehicle chargers and uninterruptible power supply systems.independent output settings. Taking ASR-6600 as an example, The maximum output of each phase reaches 2kVA, supporting power supply testing of up to three DUTs to meet the needs of server power modules, Testing requirements for high-power AC power products such as electric vehicle chargers and uninterruptible power supply systems.

### AC BALANCED/UNBALANCED THREE-PHASE OUTPUT MODES D



AC Balanced Three-phase

The ASR-6000 series has unbalanced and balanced three-phase output modes. In the AC three-phase output mode, users can set the phase angles of L1, L2 and L3 for control.

AC Unbalanced Three-phase

Main applications: Three-phase input power supply products, when emulating unbalanced three-phase input and phase loss, the ability of three-phase power input products to restore balanced three-phase.

ASR-6000 has an output impedance adjustment function, which is mainly used to change the output inductance value and output impedance value of each phase to emulate the output voltage drop of each phase due to line loss. The adjustable range of the output impedance of ASR-6000 is as follows:

L1, L2, L3 Output Inductance	<b>0.0 ~ 2000</b> μH
L1, L2, L3 Output Resistance	<b>0.0 ~ 1</b> Ω

Note: This function only supports stand-alone applications. This function is automatically turned off in external parallel connection.

OUTPUT VOLTAGE RISE TIME IS ADJUSTABLE

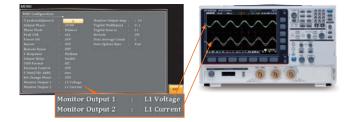
C

\* Set/Operate ASR-6000

\* Data logger function

\* Sequence Function/Simulate Function/Edit Waveform

### VOLTAGE AND CURRENT OUTPUT MONITORING FUNCTIONS



ASR-6000 provides dual-channel voltage and current monitoring, allowing instant output of voltage and current signals of each phase to an oscilloscope for measurement.

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In order to meet the test requirements of different DUT output voltages, it is necessary to adjust the rise time of different output voltages. The ASR-6000 offers users up to three adjustable settings: typical values are fast (50 microseconds), medium (100 microseconds) and slow (300 microseconds). ASR-6000 is initially set to medium speed. Note: When using 1P2W output, impedance adjustment or external parallel connection, the fast range setting will be automatically turned off. Application: It can output high-speed arbitrary waveforms to emulate various changes in the power system caused by transient high-speed rising voltage, etc.

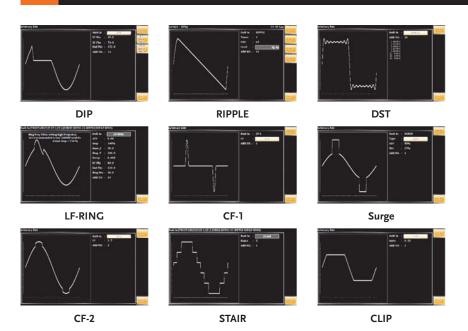
### H. ADVANCED WEB SERVER CONTROL FEATURES



ASR-6000 provides a full range of web control functions, including: \* View system and information, and network configuration

- view system and mormation, and network
- \* Monitor measurements

### DIVERSE WAVEFORM OUTPUT FUNCTION



ASR-6000 provides more than 40 built-in waveforms, including: TRI, STAIR, CLIP, CF-1, CF-2, SURGE, DST01-22, RIPPLE, DIP, LF-RING. Each waveform also provides a change setting function, which can modulate thousands of combined waveforms and quickly emulate different AC output environments.

Users can adjust the required waveform type through the panel (the screen is displayed simultaneously), then load it into the ARB 1~16 waveform register through the access step, and return to the main menu output mode to perform ARB Waveform output. Users can also edit waveform through ASR-6000 software and then import it into ASR-6000 for execution.

SPECIFICATIONS Model		ASR-6	5450	ASR	2-6600
Input Ratings					
Power type		Single-phase ; Three-phase, Delta c			
/oltage range <sup>°1</sup>		200 Vac to 240 Vac ±10 % phase ve	oltage (Delta: L-L, Y: L-N)		
requency range		47 Hz to 63 Hz			
Power factor*2		0.95 or higher (typ.)			
Efficiency <sup>*2</sup> Aaximum power consumptic	n	80 % or higher 6 kVA or lower		8 kVA or lower	
		J KVA OF IOWER		o kvA or lower	
AC Output		Cincle when the t	Debudere i i	Carlenter	Delushas
Multi-phase output		Single-phase output	Polyphase output	Single-phase output	Polyphase output
Output capacity Node		4.5 kVA 1P2W	1P3W: 3 kVA ; 3P4W: 4.5 kVA 1P3W ; 3P4W (Y-connection)	6 kVA 1P2W	1P3W: 4 kVA ; 3P4W: 6 kVA 1P3W ; 3P4W (Y-connection)
etting mode <sup>*3</sup>		1P2w	Independ, Balanced	1P2w	Independ, Balanced
etting mode			(sine and square wave), Setting Re		macpena, balancea
hase voltage	Setting Range <sup>*4</sup> Accuracy <sup>*5</sup>		o 1000 Vpp (triangle and arbitrary w	1	/ 0.1 Vpp / 1 Vpp
ine voltage setting range <sup>°6</sup>			1P3W: 0.00 V to 350.0 V / 0.00 V to 700.0 V 3P4W: 0.00 V to 303.1 V / 0.00 V to 606.2 V (sine and square wave) Setting Resolution: 0.01 V / 0.1 V 1P3W: 0.00 Vpp to 1000 Vpp / 0.00 Vpp to 2000 Vpp 3P4W: 0.00 Vpp to 866.0 Vpp / 0.00 Vpp to 1732 Vpp (triangle and arbitrary wave) Setting Resolution: 0.01 Vpp /		1P3W: 0.00 V to 350.0 V / 0.00 V to 700.0 V 3P4W: 0.00 V to 303.1 V / 0.00 V to 606.2 V (sine and square wave) Setting Resolution: 0.01 V / 0.1 V 1P3W: 0.00 Vpp to 1000 Vpp 0.00 Vpp to 2000 Vpp 3P4W: 0.00 Vpp to 866.0 Vpp 0.00 Vpp to 1732 Vpp (triangle and arbitrary wave) Setting Resolution: 0.01 Vpp 0.1 V
			0.1 Vpp / 1 Vpp		0.1 Vpp / 1 Vpp
Maximum current <sup>*7</sup>		45 A / 22.5 A	15 A / 7.5 A	60 A / 30 A	20 A / 10 A
Maximum peak current <sup>*8</sup>		Four times of the maximum RMS of			
oad power factor*9		0 to 1 (leading phase or lagging ph			
	Setting range		AC+DC Mode: 1.00 Hz to 2000.0 Hz	, Setting resolution: 0.01 Hz / 0.1 I	-lz
requency	Accuracy	± 0.01% of set			
	Stability <sup>*10</sup>	± 0.005%			
Dutput on phase setting rang			electable), 0.1° (1 Hz to 500 Hz), 1°	· · · ·	
Dutput off phase setting rang	ge <sup>"11</sup>	0.0° to 359.9° variable (Free / Fix se	electable), 0.1° (1 Hz to 500 Hz), 1°	(500 Hz to 2000 Hz)	
etting range of the phase an	gle <sup>*12</sup>		3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1°		3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1
Phase angle accuracy <sup>*13</sup>			45 Hz to 65 Hz: ±1.0° 15 Hz to 2000 Hz: ±2.0°		45 Hz to 65 Hz: ±1.0° 15 Hz to 2000 Hz: ±2.0°
DC offset <sup>*14</sup>		± 20 mV (typ.)			
OC Output (Only Single Pl	nase Output)	1			
Output capacity		4.5	(W	6	kW
/ode		Floating output, the N terminal car	1 be grounded		
(altaga	Setting Range		-500.0 V, Setting Resolution: 0.01 V	/ 0.1 V	
/oltage	Accuracy <sup>*15</sup>	±( 0.3 % of set  + 0.3 V / 0.6 V)			
1aximum current <sup>*16</sup>		45 A / 22.5 A		60 A / 30 A	
/laximum peak current <sup>*17</sup>		Four times of the maximum curren	t		
Output Stability, Total Hai	monic Distortion, Output V	oltage Rising Time and Ripple Nois	e		
ine regulation		±0.1% or less (Phase voltage)			
oad regulation <sup>*18</sup>		±0.5 V / ±1.0 V, @all other frequen	(phase voltage, 0 to 100%, via outpu cies (phase voltage, 0 to 100%, via	output terminal)	
Distortion of Output <sup>*19</sup>	×20	<0.3 % @1Hz to 100Hz, <0.5 % @ Fast: 50 µs (typ.) ; Middle:100µs (t	)100.1 Hz to 500 Hz, <1 % @500.1	HZ TO 2000 HZ	
Dutput voltage response time Ripple noise <sup>*21</sup>	1	0.5 Vrms / 1 Vrms (TYP)	yp.) , slow. soo µs (typ.)		
*1 Y connection is three-phase, f		ase, four-wire. (Accessories will be provided)			
*3. Can be only set in polyphase *4. For phase voltage setting in p *5. For an output voltage of 10 V *6. Line voltage only can be set in	mode. olyphase output. In balance mode al to 175 V / 20 V to 350 V, sine wave, i balance mode. than rated value, this is limited to s the ambient temperature is 40 degre input rectifying load. Limited by the	e power flow capacity is not available.	ode each phase are individually set. , DC voltage setting 0V (AC+DC mode) and erimmpositions, the active current of AC+	DC satisfies the maximum current. In the	case of 40 Hz or lower
or 400 Hz or higher, and that *8. With respect to the capacitor- *9. External power injection or re *16. If the output voltage is high is 40 degree or higher, the m *17. Instantaneous within 3 ms , *18. For an output voltage of 75 V	er than rated value, this is limited to aximum current may decrease. limited by the maximum current at r / to 175 V / 150 V to 350 V, a load pc	ated output voltage. wer factor of 1,stepwise change from an outpu			ie rear panel.
or 400 Hz or higher, and that *8. With respect to the capacitor- *9. External power injection or re *16. If the output voltage is high is 40 degree or higher, the m *17. Instantaneous within 3 ms, *18. For an output voltage of 75 *19. 50% or higher of the rated *20. For an output voltage of 100 *21. For 5 Hz to 1 MHz compon	r than rated value, this is limited to aximum current may decrease. limited by the maximum current at r / to 175 V / 150 V to 350 V, a load po utput voltage, the maximum current V / 200 V, a load power factor of 1, ents in DC mode using the output te	ated output voltage. wer factor of 1,stepwise change from an outpu or lower, AC and AC+DC modes, THD-N. For vith respect to stepwise change from an output rminal on the rear panel.	the polyphase it is a specification for phas current of 0 A to the maximum current (o	e voltage setting.	
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or 400 Hz or higher, and that \$8. With respect to the capacitor *9. External power injection or re *16. If the output voltage is high is 40 degree or higher of thin 3 ms, *18. For an output voltage of 75 *19. 50 % or higher of the rated *20. For an output voltage of 100 *21. For 5 Hz to 1 MHz compon Measured Value Display (A	r than rated value, this is limited to aximum current may decrease. limited by the maximum current at r / to 175 V / 150 V to 350 V, a load po utput voltage, the maximum current V / 200 V, a load power factor of 1, ents in DC mode using the output te	ated output voltage. wer factor of 1,stepwise change from an output or lower, AC and AC+DC modes, THD-N. For with respect to stepwise change from an output minal on the rear panel. nent function is indicated for 23 °C± Single-pha 0.01 V / 0.1 V	the polyphase it is a specification for phas t current of 0 A to the maximum current (o 5 °C. ) se output	e voltage setting. r its reverse). 10% ~ 90% of output voltag Polypha:	e. se output <sup>%6</sup>
or 400 Hz or higher, and that *8. With respect to the capacitor 9. External power injection or re *16. If the output voltage is high is 40 degree or higher, the m *17. Instantaneous within 3 ms, *18. For an output voltage of 100 *20. For an output voltage of 100 *21. For 5 Hz to 1 MHz compon Measured Value Display (/	r than rated value, this is limited to aximum current may decrease. Timited by the maximum current at r t to 175 V / 150 V to 350 V, a load po uptut voltage, the maximum current V / 200 V, a load power factor of 1, ents in DC mode using the output te All accuracy of the measurer	ated output voltage. wer factor of 1, stepwise change from an outpu or lower, AC and AC+DC modes, THD-N. For vith respect to stepwise change from an output rminal on the rear panel. nent function is indicated for 23 °C± Single-pha	the polyphase it is a specification for phas current of 0 A to the maximum current (o 55 °C.) se output f rdg + 0.5 V / 1 V)	e voltage setting. r its reverse). 10% ~ 90% of output voltag	re. se output <sup>*6</sup> + 0.5 V / 1 V)
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or 400 H2 or higher, and that *8. With respect to the capacitor 95. External power injection or re *16. If the output voltage is high is 40 degree or higher, the m *17. Instantaneous within 3 ms, *18. For an output voltage of 100 *21. For 5 Hz to 1 MHz compon Measured Value Display () Voltage <sup>6</sup> 1*2 Voltage <sup>6</sup> 1*2	r than rated value, this is limited to aximum current may decrease. limited by the maximum current at r / to 175 V / 150 V to 350 V, a load po vubtu voltage, the maximum curren V / 200 V, a load power factor of 1, s ents in DC mode using the output te All accuracy of the measurer solution	ated output voltage. wer factor of 1,stepwise change from an output or lower, AC and AC+DC modes, THD-N. For thr espect to stepwise change from an output minal on the rear panel. ment function is indicated for 23 °C± Single-pha: 0.01 V / 0.1 V 45 Hz to 65 Hz and DC: ± (0.7 % of rdg 15 Hz to 2000 Hz: ± (0.7 % of rdg	the polyphase it is a specification for phas current of 0 A to the maximum current (o 55 °C.) se output of rdg + 0.5 V / 1 V) + 1 V / 2 V)	e voltage setting. rits reverse). 10% ~ 90% of output voltag <b>Polypha</b> : 45 Hz to 65 Hz: ± (0.5 % of rdg 15 Hz to 2000 Hz: ± (0.7 % of r	re. <b>se output<sup>°6</sup></b> + 0.5 V / 1 V) dg + 1 V / 2 V) V)
or 400 Hz or higher, and that *8. With respect to the capacitor *9. External power injection or re *16. If the output voltage is high is 40 degree or higher, the m *17. Instantaneous within 3 ms, *18. For an output voltage of 75' *19. 50 % or higher of the rated 4 *20. For an output voltage of 100 *21. For 3 Hz to 1 MHz compon Measured Value Display ( Voltage *1*2 Voltage *1*2	r than rated value, this is limited to aximum current may decrease. limited by the maximum current at r / to 175 V / 150 V to 350 V, a load po vubtu voltage, the maximum curren V / 200 V, a load power factor of 1, s ents in DC mode using the output te <b>All accuracy of the measurer</b> solution IS value accuracy G value accuracy	ated output voltage. wer factor of 1,stepwise change from an output or lower, AC and AC+DC modes, THD-N. For th respect to stepwise change from an output minal on the rear panel. <b>nent function is indicated for 23 °C±</b> 0.01 V / 0.1 V 45 Hz to 65 Hz and DC: ± (0.5 % of 15 Hz to 2000 Hz: ± (0.7 % of fdg DC: ± ([0.5 % of rdg] + 0.5 V / 1 V)	the polyphase it is a specification for phas current of 0 A to the maximum current (o 55 °C.) se output of rdg + 0.5 V / 1 V) + 1 V / 2 V)	e voltage setting. its reverse). 10% ~ 90% of output voltag <b>Polypha</b> : 45 Hz to 65 Hz: ± (0.5 % of rdg 15 Hz to 2000 Hz: ± (0.7 % of r DC: ± ( 0.5 % of rdg  + 0.5 V / 1	re. <b>se output<sup>°6</sup></b> + 0.5 V / 1 V) dg + 1 V / 2 V) V)
or 400 Hz or higher, and that *8. With respect to the capacitor 95. External power injection or re *16. If the output voltage is high is 40 degree or higher, the m *17. Instantaneous within 3 ms, *18. For an output voltage of 100 *21. For 5 Hz to 1 MHz compon Measured Value Display (/ Voltage <sup>\$</sup> 1*2 /ottage <sup>\$</sup> 1*2 Re Re	r than rated value, this is limited to atimum current may decrease. limited by the maximum current at r / to 175 V / 150 V to 350 V, a load po uptup voltage, the maximum curren V / 200 V, a load power factor of 1, s ents in DC mode using the output te All accuracy of the measurer solution 15 value accuracy G value accuracy AK value accuracy <sup>53</sup> solution	ated output voltage. wer factor of 1,stepwise change from an output or lower, AC and AC+DC modes, THD-N. For with respect to stepwise change from an output minal on the rear panel. nent function is indicated for 23 °C± Single-pha 0.01 V / 0.1 V 45 Hz to 65 Hz and DC: ± (0.5 % of 15 Hz to 2000 Hz: ± (0.7 % of rdg DC: ± ([0.5 % of rdg] + 0.5 V / 1 V) 45 Hz to 65 Hz and DC: ± (28 % of 0.01 A / 0.1 A 45 Hz to 65 Hz and DC: ± (0.5 % of	the polyphase it is a specification for phas t current of 0 A to the maximum current (o <b>55 °C. )</b> <b>5e output</b> of rdg + 0.5 V / 1 V) + 1 V / 2 V) rdg  + 1 V / 2 V) Frdg + 0.1 A / 0.05 A)	e voltage setting. rits reverse). 10% - 90% of output voltag Polypha: 45 Hz to 65 Hz: ± (0.5 % of rdg 15 Hz to 2000 Hz: ± (0.7 % of r DC: ± ( 0.5 % of rdg  + 0.5 V / 1 45 Hz to 65 Hz: ±( 2 % of rdg  - 45 Hz to 65 Hz: ± (0.5 % of rdg	re. <b>se output</b> <sup>*6</sup> + 0.5 V / 1 V) dg + 1 V / 2 V) V) + 1 V / 2 V) + 0.05 A / 0.03 A)
or 400 Hz or higher, and that *8. With respect to the capacitor *9. External power injection or re *16. If the output voltage is high is 40 degree or higher, the m *17. Instantaneous within 3 ms, *18. For an output voltage of 100 *20. For an output voltage of 100 *21. For 5 Hz to 1 MHz compon Veasured Value Display (/ Voltage <sup>5</sup> 1*2 Re Eurrent <sup>*4</sup>	r than rated value, this is limited to aximum current may decrease. limited by the maximum current at r / to 175 V / 150 V to 350 V, a load po vubput voltage, the maximum current V / 200 V, a load power factor of 1, ents in DC mode using the output te All accuracy of the measurer solution 15 value accuracy 6 value accuracy 85 value accuracy 15 value accuracy	ated output voltage. wer factor of 1,stepwise change from an output or lower, AC and AC+DC modes, THD-N. For thr espect to stepwise change from an output minal on the rear panel. <b>nent function is indicated for 23 °C±</b> <b>Single-pha</b> 0.01 V / 0.1 V 45 Hz to 65 Hz and DC: ± (0.5 % of 15 Hz to 05 Hz and DC: ± (2 % of 0.01 A / 0.1 A 45 Hz to 65 Hz and DC: ± (2 % of 0.01 A / 0.1 A 45 Hz to 65 Hz and DC: ± (0.5 % of 15 Hz to 2000 Hz: ± (0.7 % of rdg - 45 Hz to 2000 Hz: ± (0.7 % of rdg - 15 Hz to 2000 Hz: ± (0.7 % of rdg - 15 Hz to 2000 Hz: ± (0.7 % of rdg -	the polyphase it is a specification for phas it current of 0 A to the maximum current (o <b>5 °C.)</b> <b>5 e output</b> of rdg + 0.5 V / 1 V) + 1 V / 2 V) rdg  + 1 V / 2 V) frdg + 0.1 A / 0.05 A) - 0.2 A / 0.1 A)	e voltage setting. rits reverse). 10% – 90% of output voltag Polypha: 45 Hz to 65 Hz: ± (0.5 % of rdg 15 Hz to 2000 Hz: ± (0.7 % of r DC: ± ( 0.5 % of rdg  + 0.5 V / 1 45 Hz to 65 Hz: ±( 2 % of rdg  - 45 Hz to 65 Hz: ±(0.5 % of rdg 15 Hz to 2000 Hz: ±(0.7 % of rdg)	re. <b>se output<sup>*6</sup></b> + 0.5 V / 1 V) dg + 1 V / 2 V) V) + 1 V / 2 V) + 0.05 A / 0.03 A) dg + 0.1 A / 0.05 A)
or 400 Hz or higher, and that *8. With respect to the capacitor *9. External power injection or re *16. If the output voltage is high is 40 degree or higher, the m *17. Instantaneous within 3 ms, *18. For an output voltage of 100 *20. For an output voltage of 100 *21. For 5 Hz to 1 MHz compon Veasured Value Display (/ Voltage <sup>5</sup> 1*2 Re Eurrent <sup>6</sup> 4 RN	r than rated value, this is limited to atimum current may decrease. limited by the maximum current at r / to 175 V / 150 V to 350 V, a load po uptup voltage, the maximum curren V / 200 V, a load power factor of 1, s ents in DC mode using the output te All accuracy of the measurer solution 15 value accuracy G value accuracy AK value accuracy <sup>53</sup> solution	ated output voltage. wer factor of 1,stepwise change from an output or lower, AC and AC+DC modes, THD-N. For with respect to stepwise change from an output minal on the rear panel. nent function is indicated for 23 °C± Single-pha 0.01 V / 0.1 V 45 Hz to 65 Hz and DC: ± (0.5 % of 15 Hz to 2000 Hz: ± (0.7 % of rdg DC: ± ([0.5 % of rdg] + 0.5 V / 1 V) 45 Hz to 65 Hz and DC: ± (28 % of 0.01 A / 0.1 A 45 Hz to 65 Hz and DC: ± (0.5 % of	the polyphase it is a specification for phas it current of 0 A to the maximum current (o <b>5°C.)</b> <b>5e output</b> frdg + 0.5 V / 1 V) + 1 V / 2 V) rdg[ + 1 V / 2 V) frdg + 0.1 A / 0.05 A) - 0.2 A / 0.1 A) A)	e voltage setting. rits reverse). 10% - 90% of output voltag Polypha: 45 Hz to 65 Hz: ± (0.5 % of rdg 15 Hz to 2000 Hz: ± (0.7 % of r DC: ± ( 0.5 % of rdg  + 0.5 V / 1 45 Hz to 65 Hz: ±( 2 % of rdg  - 45 Hz to 65 Hz: ± (0.5 % of rdg	re. <b>se output<sup>~6</sup></b> + 0.5 V / 1 V) dg + 1 V / 2 V) V) + 1 V / 2 V) + 0.05 A / 0.03 A) dg + 0.1 A / 0.05 A) .05 A)

Model			ASR-6450	ASR-6600		
	Active (MA	Resolution	0.1 W /1 W	-		
	Active (W)	Accuracy <sup>*9</sup>	±(1 % of rdg + 3 W)	±(1 % of rdg + 1 W)		
°7*8	Annavart 0(A)	Resolution	0.1 VA / 1 VA	· · ·		
Power <sup>≈7*8</sup>	Apparent (VA)	Accuracy	±(2 % of rdg + 6 VA)	±(2 % of rdg + 2 VA)		
	D	Resolution	0.1 VAR / 1 VAR			
	Reactive (VAR)	Accuracy <sup>*10</sup>	±(2 % of rdg + 6 VAR)	±(2 % of rdg + 2 VAR)		
Range			0.000 to 1.000			
Power factor		Resolution	0.001			
		Range	Up to 100th order of the fundamental wave			
Harmonic voltage Effectiv	ve	Full Scale	200 V / 400 V, 100%			
value (rms) Percent (%)	. *11	Resolution	0.01 V /0.1 V, 0.1%			
(AC-INT and 50/60 Hz or	nly) ''	Accuracy <sup>*12</sup>	Up to 20th: ±(0.2 % of rdg + 0.5 V / 1 V) ; 20th to 100th: ±(0.3 % of	rdg + 0.5 V / 1 V)		
		Range	Up to 100th order of the fundamental wave			
Harmonic current		Full Scale	63 A / 31.5 A, 100%	21 A / 10.5 A, 100%		
Effective value (rms)		Resolution	0.01 A / 0.1 A, 0.1%			
Percent (%)	. *11		Up to 20th: ±(1 % of rdg + 1.5 A / 0.75 A)	Up to 20th: ±(1 % of rdg + 0.5 A / 0.25 A)		
(AC-INT and 50/60 Hz or	nly)"''	Accuracy <sup>*13</sup>	20th to 100th: $\pm(1.5 \% \text{ of rdg} + 1.5 \text{ A} / 0.75 \text{ A})$	20th to 100th: $\pm(1.5 \% \text{ of rdg} + 0.5 \text{ A} / 0.25 \text{ A})$		
*5. The accuracy is for outp *6. In the polyphase output *7. For an output voltage of DC or an output frequer	he case that the output out waveform DC or si , these are the specifi f 50 V or greater, an or	ut current is 5% to 10 ne wave only. cations for each phas utput current in the r	*12. For an output voltage of 1	ot conform to the IEC or other standard. Phase Voltage and Phase Current.		
Others						
Protections			UVP, OVP, OCP, OTP, OPP, Fan Fail, Peak and RMS Current Limit			
Parallel function			Up to 3 units			
Display			TFT-LCD, 7 inch			
Memory function	-		Store and recall settings, Basic settings: 10			
	Number of mem	ories	253 (nonvolatile)			
Arbitrary Wave	Waveform length		4096 words			
	Amplitude resolu	ution	16 bits			
General Specifications						
		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	s Instrument IP Address Subnet Mask		
	Standard	External	External Signal Input ; External Control I/O ; V/I Monitor Output	s, instantent in Address, Subilet Musik		
nterface		RS-232C	Complies with the EIA-RS-232 specifications			
	Optional 1	GPIB	SCPI-1993, IEEE 488.2 compliant interface			
	Optional 1 Optional 2	CAN Bus	Complies with CAN 2.0A or 2.0B based protocol			
Inculation ro-i-t	Optional 3	DeviceNet	Complies with CAN 2.0A or 2.0B based protocol			
nsulation resistance	Between input and and chassis, input		DC 500 V, 30 M $\Omega$ or more			
Withstand voltage	Between input and and chassis, input	l chassis, output	AC 1500 V or DC 2130 V , 1 minute			
EMC			EN 61326-1 (Class A) EN 61326-2-1/-2-2 (Class A) EN 61000-3-2/-3-12 (Class A, Group 1) EN 61000-3-2/-3-11 (Class A, Group 1) EN 61000-4-2/-4-3/-4-4/-4-5/-4-6/-4-8/-4-11/-4-34 (Class A, Group 1) EN 55011 (Class A, Group1)			
Safety			EN 61010-1			
Vibration, Shock and Transportation Integrity		ity	ISTA 2A Test Procedure			
/ibration, Shock and Trai	Operating enviro	onment	Indoor use, Overvoltage Category II			
	Operating tempe	erature range	0 °C to 40 °C			
	operating tempe		-10 °C to 70 °C			
	Storage tempera	ture range				
	Storage tempera	-	20 %rh to 80 % RH (no condensation)			
		dity range	20 %rh to 80 % RH (no condensation) 90 % RH or less (no condensation)			
Vibration, Shock and Trai	Storage tempera Operating humic	dity range	90 % RH or less (no condensation)			
Environment	Storage tempera Operating humid Storage humidity	dity range	90 % RH or less (no condensation) Up to 2000 m			
	Storage tempera Operating humid Storage humidity	dity range	90 % RH or less (no condensation)			

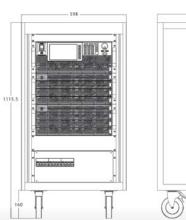
# GRA-451-J Rack Mount Kit (JIS)

GRA-451-E Rack Mount Kit (EIA)

Mall								
Model			ASR	8-6450-09	AS	R-6600-12		
Input Ratings								
Power type			Three-phase Four-wire Y conr					
Voltage range <sup>-1</sup> Frequency range			380 Vac to 460 Vac ±10 % (Li	ne Voltage)				
Power factor <sup>°2</sup>			47 Hz to 63 Hz 0.95 or higher (typ.)					
Efficiency <sup>°2</sup>			80 % or higher					
Maximum power consun	nption		12 kVA or lower		16 kVA or lower			
AC output								
Multi-phase output			Single-phase output	Polyphase output	Single-phase output	Polyphase output		
Output capacity			9 kVA	1P3W: 6 kVA 3P4W: 9 kVA	12 kVA	1P3W: 8 kVA 3P4W: 12 kVA		
Mode			1P2W	1P3W 3P4W (Y-connection)	1P2W	1P3W 3P4W (Y-connection)		
Setting mode <sup>3</sup>		1	 0.00 \/ to 175.0 \/ / 0.0 \/ to 25	Unbalance, Balanced 50.0 V (sine and square wave), Setting Reso		Unbalance, Balanced		
Phase voltage		Setting Range <sup>*4</sup> Accuracy <sup>*5</sup>		Vpp to 1000 Vpp (triangle and arbitrary wa		р / 0.1 Vpp / 1 Vpp		
Line voltage setting range	e° <sup>6</sup>	Include y	(, , , , , , , , , , , , , , , , ,	1P3W: 0.00 V to 350.0 V / 0.00 V to 700.0 V 3P4W: 0.00 V to 303.1 V / 0.00 V to 606.2 V (sine and square wave) Setting Resolution: 0.01 V / 0.1 V 1P3W: 0.00 Vpp to 1000 Vpp / 0.00 Vpp to 2000 Vpp 3P4W: 0.00 Vpp to 866.0 Vpp / 0.00 Vpp to 1732 Vpp (triangle and arbitrary wave) Setting Resolution: 0.01 Vpp / 0.1		1P3W: 0.00 V to 350.0 V / 0.00 V to 700.0 V           3P4W: 0.00 V to 303.1 V / 0.00 V to 606.2 V           (sine and square wave)           Setting Resolution: 0.01 V / 0.1 V           1P3W: 0.00 Vpp to 1000 Vpp / 0.00 Vpp to 2000 Vpp           3P4W: 0.00 Vpp to 866.0 Vpp / 0.00 Vpp to 1732 Vpp           (triangle and arbitrary wave)           Setting Resolution: 0.01 Vp / 0.1		
			00.4.45.4	Vpp / 1 Vpp	120 4 / 60 4	Vpp / 1 Vpp		
Maximum current <sup>-7</sup> Maximum peak current <sup>*8</sup>	8		90 A / 45 A Four times of the maximum F	30 A / 15 A RMS current	120 A / 60 A	40 A / 20 A		
Load power factor <sup>9</sup>			0 to 1 (leading phase or laggi					
· ·		Setting range		Hz, AC+DC Mode: 1.00 Hz to 2000.0 Hz,	Setting resolution: 0.01 Hz / 0.1	Hz		
Frequency		Accuracy *10	± 0.01% of set ± 0.005%					
Output on phase setting	range <sup>*11</sup>	Stability <sup>*10</sup>		Fix selectable), 0.1° (1 Hz to 500 Hz), 1° (5	00 Hz to 2000 Hz)			
Output off phase setting				Fix selectable), 0.1° (1 Hz to 500 Hz), 1° (5	,			
Setting range of the phas	se angle <sup>*12</sup>			3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1° 45 Hz to 65 Hz: ±1.0°		3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1° 45 Hz to 65 Hz: ±1.0°		
Phase angle accuracy <sup>*13</sup>				15 Hz to 2000 Hz: ±2.0°		15 Hz to 2000 Hz: ±2.0°		
DC offset <sup>*14</sup>			± 20 mV (typ.)					
DC output (only single	e phase output)			- Lux				
Output capacity Mode			Floating output, the N termin	9 kW		12 kW		
		Setting Range		V to +500.0 V, Setting Resolution: 0.01 V /	0.1 V			
Voltage		Accuracy <sup>*15</sup>	±( 0.3 % of set  + 0.3 V / 0.6 \					
Maximum current <sup>°16</sup>	17		90 A / 45 A		120 A / 60 A			
			Four times of the maximum of	current				
Maximum peak current <sup>*1</sup>		Output voltago ricir	a time and Pipple poice					
Maximum peak current <sup>∗1</sup> Output Stability, Total Ha		Output voltage risir	g time and Ripple noise ±0.1% or less (Phase voltage)					
Maximum peak current <sup>*1</sup> Output Stability, Total Ha Line regulation Load regulation <sup>*18</sup>		Output voltage risir	±0.1% or less (Phase voltage) ±0.5 V / ±1.0 V (phase voltage	e, 0 to 100%, via output terminal)				
Maximum peak current <sup>*1</sup> Output Stability, Total Ha Line regulation Load regulation <sup>*18</sup> Distortion of Output <sup>*19</sup>	armonic Distortion,	Output voltage risir	±0.1% or less (Phase voltage) ±0.5 V / ±1.0 V (phase voltage <0.3 % @1Hz to 100Hz, <0.5	e, 0 to 100%, via output terminal) % @100.1 Hz to 500 Hz, <1 % @500.1 H	z to 2000 Hz			
Maximum peak current <sup>*1</sup> Output Stability, Total Ha Line regulation Load regulation <sup>*18</sup>	armonic Distortion,	Output voltage risir	±0.1% or less (Phase voltage) ±0.5 V / ±1.0 V (phase voltage	e, 0 to 100%, via output terminal) % @100.1 Hz to 500 Hz, <1 % @500.1 H	z to 2000 Hz			
Maximum peak current <sup>*1</sup> Output Stability, Total Ha Line regulation Load regulation <sup>118</sup> Distortion of Output <sup>*19</sup> Output voltage response Ripple noise <sup>*21</sup> *1 Y connection is three-pi *2. In the case of AC-INT *3. Can be only set in poly *4. For phase voltage set *6. Line voltage only can *6. Line voltage only can *6. Line voltage only can *9. External power injection *16. If the output voltage i is 40 degree or higher, an *18. For an output voltage *19. 50 % or higher of the *20. For an output voltage *20. For an output voltage *19. 50 % or higher of the *20. For an output voltage *21. For S Hz to 1 MHz co	armonic Distortion, time <sup>\$20</sup> hase, five-wire, Delta cc mode, the rate output v phase mode. ng in polyphase output of 10 V to 175 V / 200 to 175 W in 200 e set in balance mode. higher than rated valu the maximum current the maximum current the maximum current the maximum current of 100 V / 200 V, a loac mponents in DC mode	onnection is three-pha oltage, resistance loac . In balance mode all p to 350 V, sine wave, an e, this is limited to sat operature is 40 degree oad. Limited by the m his over short reverse e, this is limited to sa may decrease. use, this is limited to sa may decrease. use the sature of the sature to 350 V, a load pow me maximum current at rat V to 350 V, a load pow me maximum current of 1, wit using the output term	±0.1% or less (Phase voltage) ±0.5 V / ±1.0 V (phase voltage) <0.5 V / ±1.0 V (phase voltage) <0.3 % @11Hz to 100Hz, <0.5 Middle: 100 µs (typ.); Slow: 3 0.5 Vrms / 1 Vrms (TYP) se, four-wire. (Accessories will be provid lat maximum output current, 45 Hz to 6 whase are collectively set and in unbaland output frequency of 45 Hz to 65 Hz, no sfy the power capacity. If there is the DC or higher, the maximum current may dee aximum current. power flow capacity is not available. tisfy the power capacity. If there is the AC ed output voltage. er factor of 1, stepwise change from an or 1 lower, AC and AC+DC modes, THD+N h respect to stepwise change from an or inial on the rear panel.	e, 0 to 100%, via output terminal) % @100.1 Hz to 500 Hz, <1 % @500.1 H 00 µs (typ.) ed) 5 Hz and sine wave output only. ce mode each phase are individually set. Ioad, DC voltage setting 0V (AC+DC mode) and .superimmpositions, the active current of AC+E crease. C superimmpositions , the active current of AC+E crease. C superimmpositions , the active current of AC+E crease.	23°C ± 5°C. For phase voltage settin C satisfies the maximum current. In DC satisfies the maximum current. A reverse), using the output terminal c voltage setting.	the case of 40 Hz or lower and the ambient temperature on the rear panel.		
Maximum peak current <sup>*1</sup> Output Stability, Total Ha Line regulation <sup>118</sup> Distortion of Output <sup>*19</sup> Output voltage response Ripple noise <sup>*21</sup> *1 Y connection is three-pi *2. In the case of AC-INT *3. Can be only set in poly *4. For phase voltage setti *5. For an output voltage of *6. Line voltage only can be *7. If the output voltage of *8. With respect to the cap *9. External power injection *16. If the output voltage of is 60 degree or higher, an *17. Instantaneous within *18. For an output voltage *19. 50 % or higher of the *20. For an output voltage *20. For an output voltage *21. For S Hz to 1 MHz co	armonic Distortion, time <sup>\$20</sup> hase, five-wire, Delta cc mode, the rate output v phase mode. ng in polyphase output of 10 V to 175 V / 200 to 175 W in 200 e set in balance mode. higher than rated valu the maximum current the maximum current the maximum current the maximum current of 100 V / 200 V, a loac mponents in DC mode	onnection is three-pha oltage, resistance loac . In balance mode all p to 350 V, sine wave, an e, this is limited to sat operature is 40 degree oad. Limited by the m his over short reverse e, this is limited to sa may decrease. use, this is limited to sa may decrease. use the sature of the sature to 350 V, a load pow me maximum current at rat V to 350 V, a load pow me maximum current of 1, wit using the output term	±0.1% or less (Phase voltage) ±0.5 V / ±1.0 V (phase voltage) ±0.5 V / ±1.0 V (phase voltage) <0.3 % @1Hz to 100Hz, <0.5 Middle: 100 µs (typ.); Slow: 3 0.5 Vrms / 1 Vrms (TYP) se, four-wire. (Accessories will be provid lat maximum output current, 45 Hz to 6 whase are collectively set and in unbalant output frequency of 45 Hz to 65 Hz, no sfy the power capacity. If there is the DC or higher, the maximum current may dee aximum current. power flow capacity is not available. tisfy the power capacity. If there is the AC ed output voltage. er factor of 1, stepwise change from an o r lower, AC and AC+DC modes, THD-N. h respect to stepwise change from an o inial on the rear panel. <b>function is indicated for 23 °C±S</b>	e, 0 to 100%, via output terminal) % @100.1 Hz to 500 Hz, <1 % @500.1 H 00 µs (typ.) ed) 5 Hz and sine wave output only. ce mode each phase are individually set. Ioad, DC voltage setting 0V (AC+DC mode) and : superimmpositions, the active current of AC+E crease. C superimmpositions , the active current of AC+E is uperimmpositions , the active current of AC+E crease. C superimmpositions , the active current of AC+E is port polyphase it is a specification for phase utput current of 0 A to maximum current (or <b>*C.)</b>	23°C ± 5°C. For phase voltage settin C satisfies the maximum current. In DC satisfies the maximum current. A preverse), using the output terminal c voltage setting, its reverse). 10% – 90% of output vo	the case of 40 Hz or lower ind the ambient temperature on the rear panel.		
Maximum peak current <sup>*1</sup> Output Stability, Total Ha Line regulation <sup>118</sup> Distortion of Output <sup>*19</sup> Output voltage response Ripple noise <sup>*21</sup> *1 Y connection is three-pi *2. In the case of AC-INT *3. Can be only set in poly *4. For phase voltage setti *5. For an output voltage of *6. Line voltage only can b *7. If the output voltage of *8. With respect to the cap *9. External power injection *16. If the output voltage is is 40 degree or higher, an *17. Instantaneous within *18. For an output voltage *19. 50 % or higher of the *20. For an output voltage *21. For S Hz to 1 MHz co	armonic Distortion, time <sup>\$20</sup> hase, five-wire, Delta cc mode, the rate output v phase mode. ng in polyphase output of 10 V to 175 V / 200 to 175 W in 200 e set in balance mode. higher than rated valu the maximum current the maximum current the maximum current the maximum current of 100 V / 200 V, a loac mponents in DC mode	onnection is three-pha oltage, resistance loac . In balance mode all p to 350 V, sine wave, an e, this is limited to sat operature is 40 degree oad. Limited by the m his over short reverse e, this is limited to sa may decrease. use, this is limited to sa may decrease. use the sature of the sature to 350 V, a load pow me maximum current at rat V to 350 V, a load pow me maximum current of 1, wit using the output term	±0.1% or less (Phase voltage) ±0.5 V / ±1.0 V (phase voltage) ±0.5 V / ±1.0 V (phase voltage) <0.3 % @1Hz to 100Hz, <0.5 Middle: 100 µs (typ.); Slow: 3 0.5 Vrms / 1 Vrms (TYP) se, four-wire. (Accessories will be provid lat maximum output current, 45 Hz to 6 whase are collectively set and in unbalant output frequency of 45 Hz to 65 Hz, no sfy the power capacity. If there is the DC or higher, the maximum current may dee aximum current. power flow capacity is not available. tisfy the power capacity. If there is the AC ed output voltage. er factor of 1, stepwise change from an o r lower, AC and AC+DC modes, THD-N. h respect to stepwise change from an o inial on the rear panel. <b>function is indicated for 23 °C±S</b>	e, 0 to 100%, via output terminal) % @100.1 Hz to 500 Hz, <1 % @500.1 H 00 µs (typ.) ed) 5 Hz and sine wave output only. ce mode each phase are individually set. Ioad, DC voltage setting 0V (AC+DC mode) and .superimmpositions, the active current of AC+E crease. C superimmpositions , the active current of AC+E crease. C superimmpositions , the active current of AC+E crease.	23°C ± 5°C. For phase voltage settin C satisfies the maximum current. In DC satisfies the maximum current. A preverse), using the output terminal c voltage setting, its reverse). 10% – 90% of output vo	the case of 40 Hz or lower and the ambient temperature on the rear panel.		
Maximum peak current <sup>*1</sup> Output Stability, Total Hi Line regulation Load regulation <sup>*18</sup> Distortion of Output <sup>*19</sup> Output voltage response Ripple noise <sup>*21</sup> *1 Y connection is three.pl *2. In the case of AC-INT r *3. Can be only set in poly *4. For phase voltage setti *5. For an output voltage. *5. For an output voltage to *7. If the output voltage is or 400 Hz o r higher, an *8. With respect to the cap *9. External power injection *16. If the output voltage is 40 degree or higher, *17. Instantaneous within *18. For an output voltage *21. For an output voltage *21. For an output voltage *21. For S Hz to 1 MHz co	armonic Distortion, t time <sup><math>\circ</math>20 hase, five-wire, Delta cc mode, the rate output v phase mode. ng in polyphase output v phase mode. In balance mode. In balance mode. In or regeneration which is higher than rated value di that the ambient tern bacitor-input rectifying I no r regeneration which is higher than rated value is higher than rated value is higher than rated value is no regeneration which is higher than rated value of 75 V to 157 V 150 rated output voltage. th of 100 V / 200 V, a load wponents in DC mode</sup>	onnection is three-pha oltage, resistance load . In balance mode all p to 350 V, sine wave, an e, this is limited to sat oget a the store of the store oad. Limited by the m his over short reverse up, this is limited to sa may decrease. . up, this is limited to sa may decrease. . up to store the store maximum current at rat V to 350 V, a load pow the maximum current of 1, wit u using the output term the measurement	±0.1% or less (Phase voltage) ±0.5 V / ±1.0 V (phase voltage) ±0.5 V / ±1.0 V (phase voltage) <0.3 % @1Hz to 100Hz, <0.5 Middle: 100 µs (typ.); Slow: 3 0.5 Vrms / 1 Vrms (TYP) se, four-wire, (Accessories will be provid lat maximum output current, 45 Hz to 6 ohase are collectively set and in unbalant output frequency of 45 Hz to 65 Hz, no sfy the power capacity. If there is the DC or higher, the maximum current may de aximum current. Is not available. power flow capacity. If there is the AC ed output voltage. er factor of 1,stepwise change from an o r lower, AC and AC+DC modes, THD-N. h respect to stepwise change from an o inal on the rear panel. <b>function is indicated for 23 °C±5</b>	e, 0 to 100%, via output terminal) % @100.1 Hz to 500 Hz, <1 % @500.1 H 00 μs (typ.) ed) 5 Hz and sine wave output only. ce mode each phase are individually set. load, DC voltage setting 0V (AC+DC mode) and i superimmpositions, the active current of AC+E crease. C superimmpositions , the active current of AC+E crease. C superimmpositions , the active current of AC+E is a specification for phase utput current of 0 A to maximum current (or its . For the polyphase it is a specification for phase utput current of 0 A to the maximum current (or is °C.) phase output 5 % of rdg + 0.5 V / 1 V)	23°C ± 5°C. For phase voltage settin C satisfies the maximum current. In DC satisfies the maximum current. A preverse), using the output terminal c voltage setting, its reverse). 10% – 90% of output vo	the case of 40 Hz or lower and the ambient temperature on the rear panel. bitage. bitage. frdg + 0.5 V / 1 V)		
Maximum peak current <sup>*1</sup> Output Stability, Total Hi Line regulation Load regulation <sup>*18</sup> Distortion of Output <sup>*19</sup> Output voltage response Ripple noise <sup>*21</sup> *1 Y connection is three.pl *2. In the case of AC-INT r *3. Can be only set in poly *4. For phase voltage setti *5. For an output voltage. *5. For an output voltage to *7. If the output voltage is or 400 Hz o r higher, an *8. With respect to the cap *9. External power injection *16. If the output voltage is 40 degree or higher, *17. Instantaneous within *18. For an output voltage *21. For an output voltage *21. For an output voltage *21. For S Hz to 1 MHz co	armonic Distortion, time <sup>\$20</sup> hase, five-wire, Delta cc mode, the rate output v hase, five-wire, Delta cc mode, the rate output v fi IO V to 175 V / 20 V1 e set in balance mode. higher than rated value the maximum current the maximum current the maximum current the maximum current of IO V / 20 V, a loac mponents in DC mode vy (All accuracy of t Resolution RMS value accure AVG value accure	onnection is three-pha oltage, resistance load . In balance mode all p to 350 V, sine wave, an e, this is limited to sat perature is 40 degree oad. Limited by the m nis over short reverse may decrease. awinum current at V to 350 V, a load pow re maximum current at ower factor of 1, wit using the output term the measurement acy	±0.1% or less (Phase voltage) ±0.5 V / ±1.0 V (phase voltage) ±0.5 V / ±1.0 V (phase voltage) (-0.3 % @1Hz to 100Hz, <0.5 Middle: 100 µs (typ.); Slow: 3 0.5 Vrms / 1 Vrms (TYP) se, four-wire. (Accessories will be provid) lat maximum output current, 45 Hz to 65 whase are collectively set and in unbalant output frequency of 45 Hz to 65 Hz, no sfy the power capacity. If there is the DC or higher, the maximum current may dee aximum current. power flow capacity is not available. tisfy the power capacity. If there is the AC ed output voltage. er factor of 1,stepwise change from an o r lower, AC and AC+DC modes, THD-N function is indicated for 23 °C±5 Single- 0.01 V / 0.1 V 45 Hz to 65 Hz and DC: ± (0.7 % of DC: ± (0.5 % of rdg] + 0.5 V/	e, 0 to 100%, via output terminal) % @100.1 Hz to 500 Hz, <1 % @500.1 H 00 µs (typ.) ed) 5 Hz and sine wave output only. ce mode each phase are individually set. load, DC voltage setting 0V (AC+DC mode) and : superimmpositions, the active current of AC+D crease. C superimmpositions , the active current of AC+I to a the polyphase it is a specification for phase utput current of 0 A to maximum current (or : °C.) phase output 5 % of rdg + 0.5 V / 1 V) rdg + 1 V / 2 V) (1 V)	23°C ± 5°C. For phase voltage settin C satisfies the maximum current. In DC satisfies the maximum current. A reverse), using the output terminal c voltage setting. its reverse). 10% – 90% of output vc <b>Polyp</b> 45 Hz to 65 Hz: ± (0.5 % of 15 Hz to 2000 Hz: ± (0.7 % DC: ± ([0.5 % of rdg] + 0.5 <sup>+</sup>	the case of 40 Hz or lower and the ambient temperature on the rear panel. blage. blage. $rdg + 0.5 \vee / 1 \vee $ of $rdg + 1 \vee / 2 \vee $ $\vee / 1 \vee $		
Maximum peak current <sup>*1</sup> Output Stability, Total Ha Line regulation <sup>118</sup> Distortion of Output <sup>*19</sup> Output voltage response Ripple noise <sup>*21</sup> *1 Y connection is three-pi *2. In the case of AC-INT *3. Can be only set in poly *4. For phase voltage setti *5. For an output voltage of *6. Line voltage only can be *7. If the output voltage of *8. With respect to the cap *9. External power injection *16. If the output voltage of is 60 degree or higher, an *17. Instantaneous within *18. For an output voltage *19. 50 % or higher of the *20. For an output voltage *20. For an output voltage *21. For S Hz to 1 MHz co	armonic Distortion, : time <sup>°20</sup> hase, five-wire, Delta cc mode, the rate output phase mode. rg in polyphase output fol V to 175 V / 20 V1 e set in balance mode. ingher than rated value d that the ambient ter pacitor-input rectifying 1 higher than rated value d that the ambient ter pacitor-input rectifying 1 ingher than rated value of 10 V 0 175 V / 150 V rated output voltage, th of 100 V / 200 V, a load mponents in DC mode y (All accuracy of ta RMS value accurr PEAK value accurr	onnection is three-pha oltage, resistance load . In balance mode all p to 350 V, sine wave, an e, this is limited to sat perature is 40 degree oad. Limited by the m nis over short reverse may decrease. awinum current at V to 350 V, a load pow re maximum current at ower factor of 1, wit using the output term the measurement acy	±0.1% or less (Phase voltage) ±0.5 V / ±1.0 V (phase voltage) ±0.5 V / ±1.0 V (phase voltage) (-0.3 % @1Hz to 100Hz, <0.5 Middle: 100 µs (typ.); Slow: 3 0.5 Vrms / 1 Vrms (TYP) se, four-wire. (Accessories will be provid at maximum output current, 45 Hz to 6 ohase are collectively set and in unbalam output frequency of 45 Hz to 65 Hz, no sfy the power capacity. If there is the DC or higher, the maximum current may de aximum current. Single- power flow capacity is not available. tisfy the power capacity. If there is the AC ed output voltage. er factor of 1,stepwise change from an o inal on the rear panel. Function is indicated for 23 °C±5 Single- 0.01 V / 0.1 V 45 Hz to 65 Hz and DC: ± (0. 15 Hz to 2000 Hz: ± (0.7 % of DC: ± ([0.5 % of rdg] + 0.5 V/ 45 Hz to 65 Hz and DC: ± ([2	e, 0 to 100%, via output terminal) % @100.1 Hz to 500 Hz, <1 % @500.1 H 00 µs (typ.) ed) 5 Hz and sine wave output only. ce mode each phase are individually set. load, DC voltage setting 0V (AC+DC mode) and : superimmpositions, the active current of AC+D crease. C superimmpositions , the active current of AC+I to a the polyphase it is a specification for phase utput current of 0 A to maximum current (or : °C.) phase output 5 % of rdg + 0.5 V / 1 V) rdg + 1 V / 2 V) (1 V)	23°C ± 5°C. For phase voltage settin C satisfies the maximum current. In DC satisfies the maximum current. A voltage setting. its reverse), 10% – 90% of output vo <b>Polyp</b> 45 Hz to 65 Hz: ± (0.5 % o 15 Hz to 2000 Hz: ± (0.7 %	the case of 40 Hz or lower and the ambient temperature on the rear panel. blage. blage. $rdg + 0.5 \vee / 1 \vee $ of $rdg + 1 \vee / 2 \vee $ $\vee / 1 \vee $		
Maximum peak current <sup>37</sup> Output Stability, Total H: Line regulation Load regulation <sup>118</sup> Distortion of Output <sup>379</sup> Output voltage response Ripple noise <sup>321</sup> <sup>31</sup> Y connection is three-pi <sup>32</sup> . In the case of AC-INT <sup>33</sup> . Can be only set in poly <sup>34</sup> . For phase voltage set <sup>35</sup> . For an output voltage of <sup>36</sup> . Line voltage only can <sup>36</sup> . Line voltage only can <sup>37</sup> . If the output voltage of <sup>36</sup> . Line voltage only can <sup>37</sup> . If the output voltage of <sup>36</sup> . Line voltage only can <sup>38</sup> . With respect to the cap <sup>39</sup> . External power injection <sup>31</sup> . If the output voltage of <sup>31</sup> . For an output voltage <sup>32</sup> . For S higher of the <sup>32</sup> . For S higher of the <sup>32</sup> . For S Hz to 1 MHz co Measured value displa	armonic Distortion, time <sup>\$20</sup> hase, five-wire, Delta cc mode, the rate output v hase, five-wire, Delta cc mode, the rate output v fi IO V to 175 V / 20 V1 e set in balance mode. higher than rated value the maximum current the maximum current the maximum current the maximum current of IO V / 20 V, a loac mponents in DC mode vy (All accuracy of t Resolution RMS value accure AVG value accure	onnection is three-pha oltage, resistance loac . In balance mode all p to 350 V, sine wave, an e, this is limited to sat perature is 40 degree oad. Limited by the m n is over short reverse e, this is limited to sa may decrease. awinum current a to 350 V, a load pow e maximum current of power factor of 1, wi using the output term the measurement the measurement acy acy	±0.1% or less (Phase voltage) ±0.5 V / ±1.0 V (phase voltage) ±0.5 V / ±1.0 V (phase voltage) (-0.3 % @1Hz to 100Hz, <0.5 Middle: 100 µs (typ.); Slow: 3 0.5 Vrms / 1 Vrms (TYP) se, four-wire. (Accessories will be provid) lat maximum output current, 45 Hz to 65 whase are collectively set and in unbalant output frequency of 45 Hz to 65 Hz, no sfy the power capacity. If there is the DC or higher, the maximum current may dee aximum current. power flow capacity is not available. tisfy the power capacity. If there is the AC ed output voltage. er factor of 1,stepwise change from an o r lower, AC and AC+DC modes, THD-N function is indicated for 23 °C±5 Single- 0.01 V / 0.1 V 45 Hz to 65 Hz and DC: ± (0.7 % of DC: ± (0.5 % of rdg] + 0.5 V/	e, 0 to 100%, via output terminal) e, 0 to 100%, via output terminal) % @ 100.1 Hz to 500 Hz, <1 % @500.1 H 00 μs (typ.) ed) 5 Hz and sine wave output only. ce mode each phase are individually set. load, DC voltage setting 0V (AC+DC mode) and is uperimmpositions, the active current of AC+E crease. C superimmpositions , the active current of AC+E C superimmpositions , the active current of AC+E C superimmpositions , the active current of AC+E crease. C superimmpositions , the active current of AC+E C superimmpositions , the active current of AC+E S % of rdg + 0.5 V / 1 V) frdg + 1 V / 2 V) i W ) i % of rdg + 0.2 A / 0.1 A)	23°C ± 5°C. For phase voltage settin C satisfies the maximum current. In DC satisfies the maximum current. A reverse), using the output terminal c voltage setting. its reverse). 10% – 90% of output vc <b>Polyp</b> 45 Hz to 65 Hz: ± (0.5 % of 15 Hz to 2000 Hz: ± (0.7 % DC: ± ([0.5 % of rdg] + 0.5 <sup>+</sup>	the case of 40 Hz or lower and the ambient temperature on the rear panel. bitage. $frdg + 0.5 \vee / 1 \vee )$ $rot fdg + 1 \vee / 2 \vee )$ $rdg + 1 \vee / 2 \vee )$ $rdg + 0.1 \wedge / 0.05 \wedge )$		
Maximum peak current <sup>*1</sup> Output Stability, Total Hi Line regulation Load regulation <sup>*18</sup> Distortion of Output <sup>*19</sup> Output voltage response Ripple noise <sup>*21</sup> *1 Y connection is three pl *2. In the case of AC-INT r *3. Can be only set in poly *4. For phase voltage setti *5. For an output voltage c *5. Line voltage on youtput voltage *7. If the output voltage is or 400 H2 or higher, an *8. With respect to the cap *9. External power injection *16. If the output voltage i is 40 degree or higher, *19. So wight or higher, and *19. So % or higher of the *20. For an output voltage *21. For 5 Hz to 1 MHz co Measured value displa	armonic Distortion, time <sup>°20</sup> hase, five-wire, Delta cc mode, the rate output v phase mode. ng in polyphase output of 10 V to 175 V / 20 V1 e set in balance mode. Ingire than rated value di that the ambient tem bacitor-input rectifying 1 or regeneration whild is higher than rated value di that the ambient tem sociator-input rectifying 1 or or regeneration whild is higher than rated value of 75 V to 157 V / 150 rated output voltage. It is of 100 V / 200 V, a load mponents in DC mode V (All accuracy of t Resolution RMS value accuracy PEAK value accuracy Resolution	onnection is three-pha oltage, resistance load to 350 V, sine wave, an e, this is limited to sat perature is 40 degree oad. Limited by the m nis over short reverse uperature is 40 degree oad. Limited by the m may decrease. any decrease. any decrease. any decrease. any docrease. any	±0.1% or less (Phase voltage) ±0.1% or less (Phase voltage) ±0.5 V / ±1.0 V (phase voltage) (-0.3 % @1Hz to 100Hz, <0.5 Middle: 100 µs (typ.); Slow: 3 0.5 Vrms / 1 Vrms (TYP) se, four-wire. (Accessories will be provid at maximum output current, 45 Hz to 6 whase are collectively set and in unbalance output frequency of 45 Hz to 65 Hz, no sfy the power capacity. If there is the DC or higher, the maximum current may de azimum current. power flow capacity is not available. tisfy the power capacity. If there is the AC ed output voltage. er factor of 1, stepwise change from an or innal on the rear panel. <b>function is indicated for 23 °C±5</b> <b>Single-</b> 0.01 V / 0.1 V 45 Hz to 65 Hz and DC: ± (0.1 15 Hz to 2000 Hz: ± (0.7% of DC: ± (0.5% of rdg] + 0.5 V / 45 Hz to 65 Hz and DC: ± (127 0.01 A / 0.1 A 45 Hz to 65 Hz and DC: ± (127 0.01 A / 0.1 A	e, 0 to 100%, via output terminal) % @ 100.1 Hz to 500 Hz, <1 % @ 500.1 H 00 µs (typ.) ed) 5 Hz and sine wave output only. ce mode each phase are individually set. load, DC voltage setting 0V (AC+DC mode) and is uperimmpositions, the active current of AC+D crease. C superimmpositions , the active current of AC+D C superimmpositions , the active current of AC+D crease. C superimpositions , the active current of AC+D crease. C superimpos	23°C ± 5°C. For phase voltage settin C satisfies the maximum current. In DC satisfies the maximum current. A voltage setting. its reverse). 10% – 90% of output vo <b>Polyp</b> 45 Hz to 65 Hz: ± (0.5 % o 15 Hz to 2000 Hz: ± (0.7 % DC: ± ([0.5 % of rdg] + 0.5 45 Hz to 65 Hz: ±(12 % of r 45 Hz to 65 Hz: ±(12 % of r	the case of 40 Hz or lower and the ambient temperature on the rear panel. bitage. $frdg + 0.5 \vee / 1 \vee $ of rdg + 1 $\vee / 2 \vee $ $\vee / 1 \vee $ dg   + 1 $\vee / 2 \vee $ rdg + 0.1 A / 0.05 A) of rdg + 0.2 A / 0.1 A)		

Active (W)         Resolution         0.1 W (1 V (10 W)         All % 0 of dg + 2 W)           Provent <sup>171</sup> Resolution         0.1 W (1 V (W) (10 W)         All % 0 of dg + 2 W)           Rescure (W)         Rescure (V)         Rescure (V)         Rescure (V)         Rescure (V)           Rescure (W)         Rescure (V)         Rescure (V)         Rescure (V)         Rescure (V)           Rescure (V)         Rescure (V)         Rescure (V)         Rescure (V)         Rescure (V)           Rescure (V)         Rescure (V)         Rescure (V)         Rescure (V)         Rescure (V)           Rescure (V)         Rescure (V)         Rescure (V)         Rescure (V)         Rescure (V)           Rescure (V)         Rescure (V)         Rescure (V)         Rescure (V)         Rescure (V)           Rescure (V)         Rescure (V)         Rescure (V)         Rescure (V)         Rescure (V)           Rescure (V)         Rescure (V)         Rescure (V)         Rescure (V)         Rescure (V)           Rescure (V)         Rescure (V)         Rescure (V)         Rescure (V)         Rescure (V)           Rescure (V)         Rescure (V)         Rescure (V)         Rescure (V)         Rescure (V)           Rescure (V)         Rescure (V)         Rescure (V)	Model			ASR-6450-09	ASR-6600-12
$ \frac{\operatorname{Array}}{\operatorname{Array}} \operatorname{Array}} \operatorname{Array}_{\operatorname{Array}} \left( 2 + 2 \% - 1 / 2 \% $	Model		agalution		A311-0000-12
$ \begin{array}{                                    $					+(2%  of  rdg + 2) W
App and (M)         Accuracy         6 (2 % of rig + 3 VA)         (2 % of rig + 3 VA)           Read/action         Read/action         (1 / N / N / N / N / N / N / N / N / N /					±(2 % 01 lug + 2 w)
Name         Number         Number         Number         Number         Number           Processing HT         Rescher (VR)         R	Power <sup>*7*8</sup>	Apparent (VA)			(2.9) of edge (2.)(A)
Notice (Vis)         Accuracy <sup>10</sup> / Range         1.4 (2% of dig + 3 VAR)         1.2 % of dig + 3 VAR)           Share factor         Range         0.000 to 1.000					±(2 % OF rdg + 3 VA)
Prove factor         Range         0.000           4-monix orduge (Richar value (ma) Varcent (%)         Range         Up to 100h order of the fundamental wave           6-ALTN and 50(60 Hz ord)) <sup>111</sup> Range         Up to 200+ r.200 X ford do 0.50 V (1V) (200 X ford do 0.50 V (1V) (200 X ford do 0.50 V (1V) (200 X ford do 0.50 V (1V) (200 X ford do 0.50 V (1V) (200 X ford do 0.50 V (1V) (200 X ford do 0.50 V (1V) (200 X ford do 0.50 V (1V) (200 X ford do 0.50 V (1V) (200 X f		Reactive (VAR)			
Normal working: tarmonic					$\pm$ (2 % of rdg + 3 VAR)
terms is voluge fractive volug	Power factor		0		
iarmonic voltage iferative vol	-				
finde intervent [60] Reduring 01 100 V [00V [000 × 00 / dg + 0.5 V / 1V] Reduring 01 00 V [00V [000 × 00 / dg + 0.5 V / 1V] retront 02 00 × 00 / 00 × 00 / dg + 0.5 V / 1V] retront 02 00 × 00 / 00 × 00 / 00 × 00 / 00 × 00 / 00 × 00 / 00 × 00 / 00 × 00 / 00 × 00 / 00 × 00 / 00 × 00 / 00 × 00 / 00 × 00 / 00 × 00 / 00 × 00 / 00 × 00 /	Harmonic voltage				
Percent (%) AC NT and sQl (0 H c only) <sup>113</sup> Accura (7) <sup>12</sup> <sup>12</sup> <sup>12</sup> <sup>12</sup> <sup>12</sup> <sup>12</sup> <sup>12</sup> <sup>12</sup>					
Activity and \$2(60 Hc only?)**         Accurage '12         Up to 20hr: a (2,8% of rdg + 0.5 \/1 1)           tarmonic current if feature value (methods)         42.A / 21.A , 100%         42.A / 21.A , 100%           feature value (methods)         0.01 A / 01.A , 01%         42.A / 21.A , 100%         42.A / 21.A , 100%           feature value (methods)         0.01 A / 01.A , 01%         42.A / 21.A , 100%         42.A / 21.A , 100%           feature value (methods)         0.01 A / 01.A , 01%         42.A / 21.A , 100%         42.A / 21.A , 100%           feature value (methods)         0.01 A / 01.A , 01%         42.A / 21.A , 100%         42.A / 21.A , 100%           feature value (methods)         0.01 A / 01.A , 01%         42.A / 21.A , 100%         42.A / 21.A , 100%           feature value (methods)         feature value (Methods)         Methods)         42.A / 21.A , 100%         42.A / 21.A , 100%           feature value (methods)         feature value (Methods)         feature value (Methods)         10.A / 10.A , 01%         42.A / 10.A / 10.A , 01%           feature value (methods)         feature value (Methods)         feature value (Methods)         10.A / 10.A , 01%         42.A / 10.A / 10		Re	esolution		
$ \begin{array}{                                    $		nly) <sup>°11</sup>	ccuracy <sup>*12</sup>		
farmole.current farmole.current breacting     isolation     12 Å / 63 Å 100%.     42 Å / 21 Å 1.00%.       Filtericke value (m) breacting     001 Å / 01 Å 0.1%.     42 Å / 21 Å 1.00 Å.       ALNT and sQD WE confyi <sup>11</sup> Dia Solation (Totag + 1 Å / 1.0 Å Å).     Up to 200tic 40 % of ridg + 1 Å / 0.5 Å).       11. In the paperbase values, the specification is for plates values, and the CC arrange value desplay cannot be selected.     8. The apparent and maximum current.     14. The the output values is values, and the CC arrange value desplay cannot be selected.     14. The apparent and maximum current.       12. In the paperse and maximum current.     14. The apparent and maximum current.     14. The apparent and maximum current.     14. The apparent and maximum current.       13. The apparent and maximum current.     15. To fice head with the paper factor 0.5 or lows.     11. The maximum current.       14. The apparent and maximum current.     14. An output current is the range of 5 % to 100 % of the maximum current.       15. The an output brieger of 04 for g = 14.7 (7. The fit     11. The maximum current.       15. The an output brieger of 04 for g = 14.7 (7. The fit     11. The maximum current.       15. The an output brieger of 04 for g = 14.7 (7. The fit     11. The maximum current.       15. The an output brieger of 04 for g = 14.7 (7. The fit     11. The maximum current.       15. The an output brieger of 04 for g = 14.7 (7. The fit     11. The maximum current.       15. The an output brieger of 04 for g = 14.7 (7. The fit     11. T		<i>''</i>	lecuracy	, , , ,	
find isolate find iso	Harmonic current	Ra	lange	-	
Variant of SU(s)         Notice of SU(s)         Out A (s) (1, A (s), B)         Up to 2001 (1, C) (1, A (s), B)           ACAINT and SU(s)         Accuracy (1)         Up to 2001 (1, C) (1, A (s), B)         2101 to 1000 (1, C) (1, S)         2101 to 1000 (1, C) (1, S)           1. In the polytise origin, the specification is or phase values, and the CC excress value or display of the PC to made.         3. The spacerial and reactive powers are originated in the CD med.         3. The spacerial and reactive powers are originated in the CD med.           2. Accuracy (1) for origin variant CD (2) for set ware origin.         3. The scacerial for origin variant CD (2) for the maximum current.         3. The scacerial for origin variant CD (2) for the maximum current.         3. The scacerial for origin variant CD (2) for the maximum current.         3. The scacerial for origin variant CD (2) for the maximum current.         3. The scacerial for origin variant CD (2) for the maximum current.         3. The scacerial for origin variant CD (2) for the maximum current.         3. The scacerial for origin variant CD (2) for the maximum current.         3. The scacerial for origin variant CD (2) for the maximum current.         3. The scacerial for the scale for the scale dift the scale dift the scale dift the scale dift the power facer CD (2) for the maximum current.         3. The scale dift the s		Fu	ull Scale	126 A / 63 A, 100%	42 A / 21 A, 100%
Accuracy       Up to 20th: at (1 % of dg = 1 Å (1.5 Å)       Up to 20th: at (1 % of dg = 1 Å (1.5 Å)         1: In the polybase output, the specification is for plase voltage, and the D caverage value disploy cannot be selected.       9: The apparent and reading power onlybase voltage, and the D caverage value disploy cannot be selected.       9: The apparent and reading power onlybase voltage, and the D caverage value disploy cannot be selected.       9: The apparent and reading power disploy of the D C mode.         7: Accuracy value on the scare that the caver that coupt caverate is the scare that the apper trant or Site 100% of the maximum current.       9: The blad with the power factor 0.5 or logice.       9: The blad with the power factor 0.5 or logice.         7: C an output flequency of 3 V's or grades.       10: Site 100 % of the maximum current.       10: An output current is the range of 10 % or grades.       10: Site 100 % of the maximum current.         7: C an output flequency of 3 V's or grades.       10: Site 100 % of the maximum current.       10: Site 100 % of the maximum current.         Constant current is the range of 10 % to 100 % of the maximum current.         Constant current is the range of 10 % to 100 % of the maximum current.         Constant current is the range of 10 % to 100 % of the maximum current.         Constant current is the range of 10 % to 100 % of the maximum current.         Constant current is the range of 10 % to 100 % of the maximum current.         Constant current is the range of 10 % to 100 % of the m		Re	esolution	0.01 A / 0.1 A, 0.1%	
In the polythese output, the specification is for plase volume, and the DC arrenge used exploy cannot be stellard     A. Cannot and the DC and the Complex setting range.     A. Cannot and the power factor 0.5 or higher.     And the power fac		nlv) <sup>*11</sup>		Up to 20th: ±(1 % of rdg + 3 A / 1.5 A)	Up to 20th: ±(1 % of rdg + 1 A / 0.5 A)
<ul> <li>*2. Accuracy values are in the case that the output valge is within values esting range.</li> <li>*3. The scarces is for valuet valeform OC scries wave of the maximum current.</li> <li>*5. The scarces is the the output valeform of the maximum current.</li> <li>*5. The scarces is the scarce that the output current is \$56 100% of the maximum current.</li> <li>*5. The scarces is the scarce that the output current is \$56 100% of the maximum current.</li> <li>*5. The scarces is the scarces is the scarce that the output current in the range of 10% to 100% of the maximum current.</li> <li>*5. The scarces is the scarce the scarce that the output current in the range of 10% to 100% of the maximum current.</li> <li>*5. The scarce value value of the scarce that the output current in the range of 10% to 100% of the maximum current.</li> <li>*5. The scarce value value of the scarce that the output current in the range of 10% to 100% of the maximum current.</li> <li>*5. The scarce value value of the scarce that the output current in the range of 5% to 100% of the maximum current.</li> <li>*5. The scarce value value of the scarce value value value value of the scarce value value of the scarce value v</li></ul>	AC-INT and SU/OU HZ O	(יייי) Ac	ccuracy ···	21th to 100th: ±(1.5 % of rdg + 3 A / 1.5 A)	21th to 100th: ±(1.5 % of rdg + 1 A / 0.5 A)
Protections         UVP, CVP, CCP, CTP, OPP, Fan Fail, Peak and RMS Current Limit           Display         TFT-LCD, 7 Inch           Wemory function         Store and recall settings; Baic settings; 10           Wathery Wave         Waveform length         4095 words           Amplitude resolution         16 bits           Ceneral Specifications         USB         Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB-CDC / USB-TMC           Interface         USB         Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB-CDC / USB-TMC           Optional 1         CPI         CPI         PAddress, DBS IP Address, Use Password, Cateway IP Address, Instrument IP Address, Subnet Mask           Standard         USB         Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB-CDC / USB-TMC           Optional 1         CPI Bits         Complies with the EIA-RS-232 specifications           Optional 1         CPI Bits         Complies with CAN 2.0A or 2.0B based protocol           Optional 3         Device Net         Complies with CAN 2.0A or 2.0B based protocol           nsulation resistance         Between input and chasis, output and chassis, input and output         CA 1500 V or DC 2130 V, 1 minute           MC         External Specifica Class A, Group 1) EN 61000-32 (Class A, Group 1) EN 61000-42/4-34/4-4/4-5/4-6/4-8/4-111 (Class A, Group 1) EN 61000-32 (Class A, Gr	*7. For an output voltage DC or an output frequ	of 50 V or greater, an outpu			nge of 5 % to 100 % of the maximum current.
Display         TF1-LCD. 7 inch           Wernory function         Store and recall settings: 10           Valuew         Waveform length         4096 words           Amplitude resolution         16 bits           Ceneral Specifications         USB         Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB-CDC / USB-TMC           Interface         USB         Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB-CDC / USB-TMC           Optional 1         CPIB         ScPI-H93, USB-CDC / USB-TMC           Optional 1         CPIB         ScPI-H93, UEE 488.2 compliant interface           Optional 2         CAN Bus         Complies with the EIA-RS-232 specifications           Result CAN 2.0A or 2.0B based protocol         Complies with CAN 2.0A or 2.0B based protocol           Optional 3         Device Net         Complies with CAN 2.0A or 2.0B based protocol           Optional 3         Device Net         Complies with CAN 2.0A or 2.0B based protocol           Result on resistance         Between input and chassis, output and chassis, output and chassis, input and output         DC 500 V, 30 MΩ or more           Withstand Voltage         EN 61326-1 (Class A)         EN 61326-1 (Class A)           EMC         EN 61326-1 (Class A, Group 1)         EN 61326-1 (Class A, Group 1)           EN 61326-1 (Class A, Group 1)         EN 61000-3-2 (Class A, Group 1)         EN 6100				LIVE OVE OCE OTE ODE For Fail Book and PMS Comment Limit	
Memory function         Store and recall settings, Basic settings: 10           wbitrary Wave         Waveform length Amplitude resolution         233 (nonvolatile)           General Specifications         USB         Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB-CDC / USB-TMC           Centeral Specifications         USB         Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB-CDC / USB-TMC           Interface         USB         Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB-CDC / USB-TMC           Optional 1         CBIB         External Signal Input; External Control I/O; V/I Monitor Output           R5:32C         Complexe with the EIA-R5:32 specifications         Complexe with the EIA-R5:32 specifications           Optional 1         CPIB         SCPI-1993; IEEE 488.2 compliant interface         Optional 3           Optional 3         Derice Net         Complexe with CAN 2.0A or 2.0B based protocol           nsulation resistance         Between input and chassis, output and output         DC 500 V, 30 MΩ or more           Withstand voltage         Between input and output         AC 1500 V or DC 2130 V, 1 minute           EMC         EN 61326-21/-22 (Class A) EN 61326-21/-22 (Class A) EN 61326-21/-22 (Class A) EN 61000-3 : Class A, Group 1) EN 61000-4 : Class A, Group 1) EN 61000-4 : Class A, Group 1) EN 61000-4 : Class A, Group 1) EN 61000-					
Number of memories         223 (norwolatile)           Waveform length         4096 words           Amplitude resolution         15 bits           Ceneral Specifications         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           External         External         External Signal Input; External Control I/O; V/I Monitor Output           B3: 232C         Comples with the EIA-R5225 specifications           Optional 1         GPIB         SCPI-1993, IEEE 488.2 compliant interface           Optional 2         CAN Bus         Comples with CAN 2.0A or 2.0B based protocol           Optional 3         Device Net         Complies with CAN 2.0A or 2.0B based protocol           Insulation resistance         Between input and chassis, output         DC 500 V, 30 MΩ or more           Withstand voltage         Between input and chassis, output         AC 1500 V or DC 2130 V, 1 minute           IMC         EN 61326-21/2.2 (Class A) EN 61000-32 (Class A, Group 1) EN 61000-32 (Class A, Group 1) EN 61000-32 (Class A, Group 1) EN 61000-32 (Class A, Group 1)           Environment         Indoor use, Overvoltage Category II           Operating temperature range         0 'C to 40 'C           Storage temperature range         0 'C to 40 'C           <				· · · · · · · · · · · · · · · · · · ·	
Wave         Waveform length Amplitude resolution         4096 words           Ceneral Specifications         16 bits           Standard         USB         Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB-CDC / USB-TMC           Interface         USB         Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB-CDC / USB-TMC           Diptional 1         CPB         SCPL-1993, IEEE 488.2 Compliant interface           Optional 2         CAN Bus         Comples with the ELARS:232 specifications           Optional 3         Device Net         Comples with CAN 2.0 or 2.0B based protocol           Insulation resistance         Between input and chassis, output and chassis, input and output         DC 500 V, 30 MΩ or more           Withstand voltage         Between input and output         AC 1500 V or DC 2130 V, 1 minute           EMC         EN 61326-1 (Class A) EN 61000-33 (Class A, Group 1) EN 61000-31 (Class A, Group 1) EN 61000-31 (Class A, Group 1) EN 61000-42/1-43-14/4-14/-14/-64-8/-4-11 (Class A, Group 1) EN 61000-31 (Class A, Group 1) EN 61000-31 (Class A, Group 1) EN 61000-42/-43-44/-44-14/-64-8/-4-11 (Class A, Group 1) EN 61000-42/-43-44/-44-14/-64-8/-4-11 (Class A, Group 1) EN 61000-42/-43-44/-44-14/-46-48/-4-11 (Class A, Group 1) EN 61000-42/-43-44-44-14-14/-46-48/-4-11 (Class	viemory function			Store and recall settings, basic settings: 10	
Amplitude resolution         16 bits           General Specifications         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           Interface         External         External Signal Input; External Control I/O; V/I Monitor Output           Optional 1         GPIB         SCPI-1993, IEEE 488.2 compliant interface           Optional 3         Device Net         Complies with CAN 2.0A or 2.0B based protocol           Insulation resistance         Between input and chassis, output and chassis, input and output         DC 500 V, 30 MΩ or more           Withstand voltage         Between input and chassis, output and chassis, input and output         AC 1500 V or DC 2130 V, 1 minute           EMC         EN 61326-1 (Class A) EN 61000-32 (Class A) EN 61000-32 (Class A, Group 1) EN 61000-42/4-3/4-4/4-5/4-6/4-8/4-11 (Class A, Group 1) EN 55011 (Class A, Group 1) EN 61000-32 (Class A, Group 1) EN 61000-42/4-3/4-4/4-5/4-6/4-8/4-11 (Class A, Group 1) EN 61000-32 (Class A, Group 1) EN 610			1	252 (	
General Specifications         USB         Type A: Host, Type B: Slave, Speci: 1.1/2.0, USB-CDC / USB-TMC           Interface         USB         Type A: Host, Type B: Slave, Speci: 1.1/2.0, USB-CDC / USB-TMC           Optional 1         CPIB         External Signal Input; External Control I/O; V/I Monitor Output           RS-232C         Complies with the EIA-RS-232 specifications         Optional 0           Optional 1         CPIB         SCPI-1993, IEEE 488. compliant interface           Optional 2         CAN Bus         Complies with CAN 2.0A or 2.0B based protocol           Insulation resistance         Between input and chassis, output and chassis, input and output         DC 500 V, 30 MΩ or more           Withstand voltage         Between input and chassis, output and chassis, input and output         AC 1500 V or DC 2130 V, 1 minute           EMC         EN 61326-1 (Class A) EN 61002-32 (Class A, Group 1) EN 61000-42/4-3/4-4/4-4/5/4-6/4-8/4-11 (Class A, Group 1) EN 5001 (Class A, Group 1)           Safety         EN 61010-1           Environment         Operating environment           Operating temperature range         0 °C to 0 °C           Operating temperature range         0 °C to 0 °C           Operating temperature range         0 °C to 0 °C           <	A		es		
Interface         USB         Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB-CDC / USB-TMC           IAN         MAC Address, DNS IP Address, USP Password, Cateway IP Address, Instrument IP Address, Subnet Mask           External         External Signal Input; External Control I/Q: V/I Monitor Output           R5-232C         Complies with the EIA-R5-232 specifications           Optional 1         GPIB         SCPI-1993, IEEE 488.2 compliant interface           Optional 3         Device Net         Complies with CAN 2.0A or 2.0B based protocol           Optional 4         Device Net         Complies with CAN 2.0A or 2.0B based protocol           Optional a         Device Net         Complies with CAN 2.0A or 2.0B based protocol           Device Net         Ac 1500 V or DC 2130 V, 1 minute         DC 500 V, 30 MΩ or more           Withstand voltage         Between input and chassis, output and chassis, input and output         Ac 1500 V or DC 2130 V, 1 minute           EMC         EN 61326-1 (Class A) EN 61300-32 (Class A, Group 1) EN 61000-4:2/4-3/4-4-5/-4-6/4-8/-4-11 (Class A, Group 1) EN 61000-3: Glass A, Group 1) EN 61000-4:2/4-3/-4-4-5/-4-6/4-8/-4-11 (Class A, Group 1) EN 61000-4:2/4-3/-4-4-5/-4-6/4-8/-4-11 (Class A, Group 1) EN 61000-4:2/C to 70 °C           Safety         EN 61010-1           Environment         Indoor use, Overvoltage Category II           Operating temperature range         -10 °C to 70 °C           Opperating temperat	Arbitrary Wave	Waveform length		4096 words	
Anterface         LAN         MAC Address, DNS IP Address, User Password, Gateway IP Address, Instrument IP Address, Subnet Mask           Interface         External         External         External Signal Input; External Control IJ(C? VII Monitor Output           Optional 1         CPIB         SCPI-1993, IEEE 488.2 compliant interface           Optional 2         CAN Bus         Complies with the ELARS-323 specifications           Optional 3         Device Net         Complies with CAN 2.0A or 2.0B based protocol           Insulation resistance         Between input and chassis, output and chassis, output and chassis, input and output         Dc 500 V, 30 MΩ or more           Withstand voltage         Between input and chassis, output and chassis, output         AC 1500 V or DC 2130 V, 1 minute           EMC         EN 61326-1 (Class A) EN 61326-2 (Class A, Group 1) EN 61000-3-2 (Class A, Group 1) EN 61000-42 (Lass A, Group 1)           Environment         Operating renvironment         Indor use, Overvoltage Category II           Operating temperature range         -0° C to 40°C           Operating temperature range         -0° C to 40°C           Operating humidity range         20 %rh to 80 % RH (no condensation)           Operating humidity range         90 % RH or less (no condensation)           Storage humidity range	Arbitrary Wave	Waveform length Amplitude resolutior		4096 words	
Standard         External         External Signal Input; External Control I/O; V/I Monitor Output           nterface         Optional 1         CPIB         SCPL1993, IEEE 488.2 complias with the EIA-RS-223 specifications           Optional 2         CAN Bus         Complies with CAN 2.0A or 2.0B based protocol         Complies with CAN 2.0A or 2.0B based protocol           Optional 3         Device Net         Complies with CAN 2.0A or 2.0B based protocol         Complies with CAN 2.0A or 2.0B based protocol           nsulation resistance         Between input and chassis, input and output         DC 500 V, 30 MΩ or more         DC 500 V, 30 MΩ or more           Withstand voltage         Between input and chassis, output and chassis, input and output         AC 1500 V or DC 2130 V, 1 minute           EMC         EN 61326-1 (Class A) EN 61302-2-1/-2-2 (Class A, Croup 1) EN 61000-3.3 (Class A, Croup 1) EN 61000-3.3 (Class A, Croup 1)         EN 61302-3-1/-2-2 (Class A) EN 61000-3.3 (Class A, Croup 1)           Safety         EN 6100-1         EN 61000-3         IClass A, Group 1)           Environment         Operating temperature range         0 °C to 40 °C           Operating tunun		Waveform length Amplitude resolution	n	4096 words 16 bits	
nterface         External Signal Input; External Control I/O; V/I Monitor Output           nterface         Optional 1         GPIB         External Signal Input; External Control I/O; V/I Monitor Output           Optional 2         CAN Bus         SCPI-1993, IEEE 488.2 compliant interface           Optional 2         CAN Bus         Complies with CAN 2.0A or 2.0B based protocol           nsulation resistance         Between input and chassis, output and chassis, input and output         DC 500 V, 30 MΩ or more           Withstand voltage         Between input and chassis, output and chassis, input and output         AC 1500 V or DC 2130 V, 1 minute           EMC         EN 61326-1 (Class A) EN 61326-2 / 2-2 (Class A) EN 61326-3 / 2-2 (Class A) EN 61326-3 / 2-2 (Class A, Group 1) EN 50100-3 3 (Class A, Group 1) EN 50100-3 3 (Class A, Group 1) EN 50100-3 3 (Class A, Group 1) EN 5011 (Class A, Group 1		Waveform length Amplitude resolution s	n JSB	4096 words 16 bits Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB-CDC / USB-TMC	
Optional 1         GPIB         SCPI-1993, IEEE 488.2 compliant interface           Optional 2         CAN Bus         Complies with CAN 2.0A or 2.0B based protocol           Optional 3         Device Net         Complies with CAN 2.0A or 2.0B based protocol           nsulation resistance         Between input and chassis, output and chassis, input and output         DC 500 V, 30 MΩ or more           Withstand voltage         Between input and chassis, output and chassis, input and output         AC 1500 V or DC 2130 V, 1 minute           EMC         EN 61326-1 (Class A) EN 61326-2-1/-2-2 (Class A) EN 61326-2-1/-2-2 (Class A) EN 61326-2-1/-2-2 (Class A, EN 61326-2-1/-2-2 (Class A, EN 61300-3-3 (Class A, Group 1) EN 61000-3-2 (Class A, Group 1) EN 61000-3-2 (Class A, Group 1) EN 61000-3-2 (Class A, Group 1) EN 61000-4-2/-4-3/-4-6/-4-8/-4-11 (Class A, Group 1) EN 5011 (Class A, Group 1) EN 5011 (Class A, Group 1)           Safety         EN 61010-1           Environment         Indoor use, Overvoltage Category II           Operating environment         Indoor use, Overvoltage Category II           Operating temperature range         -10 °C to 70 °C           Operating humidity range         20 %rh to 80 % RH (no condensation)           Storage humidity range         90 % RH or less (no condensation)           Altiwe         Up to 2000 m		Waveform length Amplitude resolution	n JSB AN	4096 words 16 bits 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
Optional 2         CAN Bus         Complies with CAN 2.0A or 2.0B based protocol           Optional 3         Device Net         Complies with CAN 2.0A or 2.0B based protocol           nsulation resistance         Between input and chassis, output and chassis, input and output         DC 500 V, 30 MΩ or more           Withstand voltage         Between input and chassis, output and chassis, input and output         AC 1500 V or DC 2130 V, 1 minute           EMC         EN 61326-1 (Class A) EN 61326-1 /2-2 (Class A, Group 1) EN 61000-3-2 (Class A, Group 1)           Safety         EN 61310-1           Environment         Operating environment           Operating temperature range         0~C to 40 °C           Storage temperature range         -10 °C to 70 °C           Operating humidity range         20 %rh to 80 % RH (no condensation)           Storage humidity range         90 % RH or less (no condensation)           Attiude         Up to 2000 m	General Specifications	Waveform length Amplitude resolution Standard	n JSB AN xternal	4096 words 16 bits 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 External Signal Input; External Control I/O; V/I Monitor Output	Instrument IP Address, Subnet Mask
Optional 3         Device Net         Complies with CAN 2.0A or 2.0B based protocol           nsulation resistance         Between input and chassis, output and chassis, input and output         DC 500 V, 30 MΩ or more           Withstand voltage         Between input and chassis, output and chassis, input and output         AC 1500 V or DC 2130 V, 1 minute           EMC         EN 61326-1 (Class A) EN 61326-21/2-2 (Class A) EN 61000-32 (Class A, Group 1) EN 61000-42/4-3/4-4/4-5/-4-6/4-8/-4-11 (Class A, Group 1) EN 55011 (Class A, Group 1) EN 55011 (Class A, Group 1)           Safety         EN 6101-1           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 %r th 08 0% RH (no condensation)           Storage humidity range         90 % RH or less (no condensation)           Attitude         Up to 2000 m           Dimensions (mm)         598(W)×937(H)×906(D) (not including protrusions)	General Specifications	Waveform length Amplitude resolution Standard	n ISB AN xternal IS-232C	4096 words 16 bits 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 External Signal Input; External Control I/O; V/I Monitor Output Complies with the EIA-RS-232 specifications	Instrument IP Address, Subnet Mask
Insulation resistance     Between input and chassis, output and chassis, input and output     DC 500 V, 30 MΩ or more       Withstand voltage     Between input and chassis, output and chassis, input and output     AC 1500 V or DC 2130 V, 1 minute       EMC     EN 61326-1 (Class A) EN 61326-2-1/-2-2 (Class A) EN 61326-2-1/-2-2 (Class A) EN 61000-3-2 (Class A, Group 1) EN 61000-3-3 (Class A, Group 1) EN 61000-3-3 (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 6100-4-2/-4-3/-4-4/-4-5/-4-6/-4-8/-4-11 (Class A, Group 1) EN 6100-1       Safety     EN 6101-1       Environment     Indoor use, Overvoltage Category II       Operating temperature range     0~°C to 70 °C       Operating temperature range     0.0 °C to 70 °C       Operating humidity range     20 % RH (no condensation)       Storage humidity range     90 % RH or less (no condensation)       Storage humidity range     90 % RH or less (no condensation) <td></td> <td>Waveform length Amplitude resolution Standard Ex Optional 1 G</td> <td>n ISB AN xternal IS-232C IPIB</td> <td>4096 words 16 bits 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 External Signal Input; External Control I/O; V/I Monitor Output Complies with the EIA-RS-232 specifications SCPI-1993, IEEE 488.2 compliant interface</td> <td>Instrument IP Address, Subnet Mask</td>		Waveform length Amplitude resolution Standard Ex Optional 1 G	n ISB AN xternal IS-232C IPIB	4096 words 16 bits 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 External Signal Input; External Control I/O; V/I Monitor Output Complies with the EIA-RS-232 specifications SCPI-1993, IEEE 488.2 compliant interface	Instrument IP Address, Subnet Mask
and chassis, input and output     DC 500 V, 30 MΩ or more       Withstand voltage     Between input and chassis, output and chassis, input and output     AC 1500 V or DC 2130 V, 1 minute       EMC     EN 61326-1 (Class A) EN 61326-2-1/-2-2 (Class A) EN 61326-2-1/-2-2 (Class A) EN 61326-2-1/-2-2 (Class A) EN 61000-3-2 (Class A, Group 1) EN 5010 (Class A, Group 1) EN 55011 (Class A, Group 1) EN 5010 (Class A, Group 1) EN 5011 (Class A,	General Specifications	Waveform length Amplitude resolution Standard Coptional 1 GC Optional 2 C/	n JSB AN Xternal S-232C FIB CAN Bus	4096 words 16 bits 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 External Signal Input; External Control I/O; V/I Monitor Output Complies with the EIA-RS-232 specifications SCPI-1993, IEEE 488.2 compliant interface Complies with CAN 2.0A or 2.0B based protocol	Instrument IP Address, Subnet Mask
and chassis, input and output       AC 1500 V or DC 2130 V, 1 minute         EMC       EN 61326-1 (Class A) EN 61326-21/2-2 (Class A) EN 61000-3-2 (Class A, Group 1) EN 61000-3-2 (Class A, Group 1) EN 61000-3-2 (Class A, Group 1) EN 61000-4-2/4-3/-4-6/-4-8/-4-11 (Class A, Group 1) EN 55011 (Class A, Group 1) EN 55011 (Class A, Group 1)         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 %r H (no condensation)         Storage humidity range       90 % RH (no condensation)         Storage humidity range       90 % RH (no condensation)         Attude       Up to 2000 m         Dimensions (mm)       598 (W) x937 (H) x906 (D) (not including protrusions)	General Specifications	Waveform length Amplitude resolution Standard Optional 1 G Optional 2 C/ Optional 3 D	n ISB AN Sternal S-232C FIB AN Bus Device Net	4096 words 16 bits 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 External Signal Input; External Control I/O; V/I Monitor Output Complies with the EIA-RS-232 specifications SCPI-1993, IEEE 488.2 compliant interface Complies with CAN 2.0A or 2.0B based protocol	Instrument IP Address, Subnet Mask
EN 61326-1 (Class A)         EN 61326-2-1/-2-2 (Class A)         EN 61326-2-1/-2-2 (Class A)         EN 61326-2-1/-2-2 (Class A, Group 1)         EN 61000-3-2 (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 6100-1         Environment       Indoor use, Overvoltage Category II         Operating temperature range       0 °C to 40 °C         Storage temperature range       -10 °C to 70 °C         Operating humidity range       20 %rh to 80 % RH (no condensation)         Storage humidity range       90 % RH or less (no condensation)         Altitude       Up to 2000 m         Dimensions (mm)       598(W)×937(H)×906(D) (not including protrusions)	General Specifications	Waveform length Amplitude resolution Standard E Optional 1 G Optional 2 C/ Optional 3 D Between input and c	n JSB AN xternal S-232C PIB CAN Bus Device Net chassis, output	4096 words 16 bits 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 External Signal Input; External Control I/O; V/I Monitor Output Complies with the EIA-RS-232 specifications SCPI-1993, IEEE 488.2 compliant interface Complies with CAN 2.0A or 2.0B based protocol Complies with CAN 2.0A or 2.0B based protocol	Instrument IP Address, Subnet Mask
EN 61326-2-1/-2-2 (Člass A)         EN 61000-3-2 (class A, Group 1)         EN 61000-3-3 (Class A, Group 1)         EN 61000-3-3 (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)         Safety       EN 61010-1         Environment       Operating environment         Operating temperature range       0°C to 40 °C         Storage temperature range       -10 °C to 70 °C         Operating humidity range       20 %rh to 80 % RH (no condensation)         Storage humidity range       90 % RH or less (no condensation)         Storage humidity range       90 % RH or less (no condensation)         Operating humidity range       598 (W) x937 (H) x906 (D) (not including protrusions)	General Specifications	Waveform length Amplitude resolution Standard L/ Ex Optional 1 G Optional 2 C/ Optional 3 D Between input and c and chassis, input and	n ISB AN AN xternal S-232C :PIB AN Bus Device Net chassis, output chassis, output	4096 words 16 bits 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 External Signal Input; External Control I/O; V/I Monitor Output Complies with the EIA-R5-232 specifications SCPI-1993, IEEE 488.2 compliant interface Complies with CAN 2.0A or 2.0B based protocol Complies with CAN 2.0A or 2.0B based protocol DC 500 V, 30 MΩ or more	Instrument IP Address, Subnet Mask
EN 61000-3-2 (Class A, Group 1)         EN 61000-3-2 (Class A, Group 1)         EN 61000-3-3 (Class A, Group 1)         EN 61000-3-2 (Class A, Group 1)         EN 61000-3-2 (Class A, Group 1)         EN 61000-4-2/-4-3/-4-4/-4-5/-4-6/-4-11 (Class A, Group 1)         Safety       EN 61010-1         Environment       Indoor use, Overvoltage Category II         Operating temperature range       0 °C to 40 °C         Storage temperature range       -10 °C to 70 °C         Operating humidity range       20 %rh to 80 % RH (no condensation)         Storage humidity range       90 % RH or less (no condensation)         Altitude       Up to 2000 m         Dimensions (mm)       598(W)×937(H)×906(D) (not including protrusions)	General Specifications	Waveform length Amplitude resolution Standard L/ Ex Optional 1 G Optional 2 C/ Optional 3 D Between input and c and chassis, input and	n ISB AN AN xternal S-232C :PIB AN Bus Device Net chassis, output chassis, output	4096 words 16 bits 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 External Signal Input; External Control I/O; V/I Monitor Output Complies with the EIA-RS-232 specifications SCPI-1993, IEEE 488.2 compliant interface Complies with CAN 2.0A or 2.0B based protocol Complies with CAN 2.0A or 2.0B based protocol DC 500 V, 30 MΩ or more AC 1500 V or DC 2130 V , 1 minute	Instrument IP Address, Subnet Mask
EN 61000-4:2/:4-3/:4-6/-4-8/-4-11 (Class A, Group 1) EN 5011 (Class A, Group 1) EN 5011 (Class A, Group 1) EN 5011 (Class A, Group 1) EN 61010-1 Environment Operating environment Operating temperature range 0 °C to 40 °C 5torage temperature range -10 °C to 70 °C Operating humidity range 20 %rh to 80 % RH (no condensation) Storage humidity range 90 % RH or less (no condensation) Attitude Up to 2000 m Dimensions (mm) Storage Net Storage	General Specifications Interface Insulation resistance Withstand voltage	Waveform length Amplitude resolution Standard L/ Ex Optional 1 G Optional 2 C/ Optional 3 D Between input and c and chassis, input and	n ISB AN AN xternal S-232C :PIB AN Bus Device Net chassis, output chassis, output	4096 words         16 bits         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         External Signal Input; External Control I/O; V/I Monitor Output         Complies with the EIA-R5-232 specifications         SCPI-1993, IEEE 488.2 compliant interface         Complies with CAN 2.0A or 2.0B based protocol         Complies with CAN 2.0A or 2.0B based protocol         DC 500 V, 30 MΩ or more         AC 1500 V or DC 2130 V , 1 minute         EN 61326-1 (Class A)	Instrument IP Address, Subnet Mask
EN 55011 (Class A, Group1)       Safety     EN 61010-1       Environment     Indoor use, Overvoltage Category II       Operating temperature range     0 °C to 40 °C       Storage temperature range     -10 °C to 70 °C       Operating humidity range     20 %rh to 80 % RH (no condensation)       Storage humidity range     90 % RH or less (no condensation)       Altitude     Up to 2000 m       Dimensions (mm)     598(W)×937(H)×906(D) (not including protrusions)	General Specifications Interface Insulation resistance Withstand voltage	Waveform length Amplitude resolution Standard L/ Ex Optional 1 G Optional 2 C/ Optional 3 D Between input and c and chassis, input and	n JSB AN AN xternal S-232C ;PIB AN Bus Device Net chassis, output chassis, output	4096 words 16 bits 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 External Signal Input; External Control I/Q; V/I Monitor Output Complies with the EIA-RS-232 specifications SCPI-1993, IEEE 488.2 compliant interface Complies with CAN 2.0A or 2.0B based protocol Complies with CAN 2.0A or 2.0B based protocol DC 500 V, 30 MΩ or more AC 1500 V or DC 2130 V, 1 minute EN 61326-1 (Class A) EN 61326-2-1/2-2 (Class A) EN 61000-3-2 (Class A, Group 1)	Instrument IP Address, Subnet Mask
Safety     EN 61010.1       Environment     Operating environment     Indoor use, Overvoltage Category II       Operating temperature range     0 °C to 40 °C       Storage temperature range     -10 °C to 70 °C       Operating humidity range     20 %rh to 80 % RH (no condensation)       Storage humidity range     90 % RH or less (no condensation)       Altitude     Up to 2000 m       Dimensions (mm)     598(W) ×937(H) ×906(D) (not including protrusions)	General Specifications Interface Insulation resistance Withstand voltage	Waveform length Amplitude resolution Standard L/ Ex Optional 1 G Optional 2 C/ Optional 3 D Between input and c and chassis, input and	n JSB AN AN xternal S-232C ;PIB AN Bus Device Net chassis, output chassis, output	4096 words         16 bits         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         External Signal Input; External Control I/Q; V/I Monitor Output         Complies with the EIA-R5-232 specifications         SCPI-1993, IEEE 488.2 compliant interface         Complies with CAN 2.0A or 2.0B based protocol         Complies with CAN 2.0A or 2.0B based protocol         Complies with CAN 2.0A or 2.0B based protocol         DC 500 V, 30 MΩ or more         AC 1500 V or DC 2130 V , 1 minute         EN 61326-1 (Class A)         EN 61326-1 (Class A)         EN 61000-3-2 (Class A, Group 1)         EN 61000-3-3 (Class A, Group 1)	Instrument IP Address, Subnet Mask
Operating environment         Indoor use, Overvoltage Category II           Operating temperature range         0 °C to 40 °C           Storage temperature range         -10 °C to 70 °C           Operating humidity range         20 %rh to 80 % RH (no condensation)           Storage humidity range         90 % RH or less (no condensation)           Altitude         Up to 2000 m           Dimensions (mm)         598(W)×937(H)×906(D) (not including protrusions)	General Specifications Interface Insulation resistance Withstand voltage	Waveform length Amplitude resolution Standard L/ Ex Optional 1 G Optional 2 C/ Optional 3 D Between input and c and chassis, input and	n JSB AN AN xternal S-232C ;PIB AN Bus Device Net chassis, output chassis, output	4096 words         16 bits         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         External Signal Input; External Control I/Q; V/I Monitor Output         Complies with the EIA-RS-232 specifications         SCPI-1993, IEEE 488.2 compliant interface         Complies with CAN 2.0A or 2.0B based protocol         Complies with CAN 2.0A or 2.0B based protocol         DC 500 V, 30 MΩ or more         AC 1500 V or DC 2130 V, 1 minute         EN 61326-1 (Class A)         EN 61326-2 (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)	Instrument IP Address, Subnet Mask
Operating temperature range         0 °C to 40 °C           Storage temperature range         -10 °C to 70 °C           Operating humidity range         20 %rh to 80 % RH (no condensation)           Storage humidity range         90 % RH or less (no condensation)           Altitude         Up to 2000 m           Sign (mm)         598 (W) ×937 (H) ×906 (D) (not including protrusions)	General Specifications nterface nsulation resistance Withstand voltage	Waveform length Amplitude resolution Standard L/ Ex Optional 1 G Optional 2 C/ Optional 3 D Between input and c and chassis, input and	n JSB AN AN xternal S-232C ;PIB AN Bus Device Net chassis, output chassis, output	4096 words         16 bits         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         External Signal Input; External Control I/Q; V/I Monitor Output         Complies with the EIA-RS-232 specifications         SCPI-1993, IEEE 488.2 compliant interface         Complies with CAN 2.0A or 2.0B based protocol         Complies with CAN 2.0A or 2.0B based protocol         DC 500 V, 30 MΩ or more         AC 1500 V or DC 2130 V, 1 minute         EN 61326-1 (Class A)         EN 61326-2 (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)	Instrument IP Address, Subnet Mask
Operating temperature range         0 °C to 40 °C           Storage temperature range         -10 °C to 70 °C           Operating humidity range         20 %rh to 80 % RH (no condensation)           Storage humidity range         90 % RH or less (no condensation)           Altitude         Up to 2000 m           Simensions (mm)         598(W) ×937(H) ×906(D) (not including protrusions)	General Specifications nterface nsulation resistance Withstand voltage	Waveform length Amplitude resolution Standard L/ Ex Optional 1 G Optional 2 C/ Optional 3 D Between input and c and chassis, input and	n JSB AN AN xternal S-232C ;PIB AN Bus Device Net chassis, output chassis, output	4096 words         16 bits         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         External Signal Input; External Control I/O; V/I Monitor Output         Complies with the EIA-RS-232 specifications         SCPI-1993, IEEE 488.2 compliant interface         Complies with CAN 2.0A or 2.0B based protocol         Complies with CAN 2.0A or 2.0B based protocol         DC 500 V, 30 MΩ or more         AC 1500 V or DC 2130 V, 1 minute         EN 61326-1 (Class A)         EN 61326-2 (Class A, Group 1)         EN 61000-3-2 (Class A, Group 1)         EN 61000-4-2/-4-3/-4-4/-4-5/-4-8/-4-11 (Class A, Group 1)         EN 61000-3-1 (Class A, Group 1)         EN 61000-4-2/-4-3/-4-4/-4-5/-4-8/-4-11 (Class A, Group 1)         EN 55011 (Class A, Group 1)	Instrument IP Address, Subnet Mask
Storage temperature range         -10 °C to 70 °C           Operating humidity range         20 % h to 80 % RH (no condensation)           Storage humidity range         90 % RH or less (no condensation)           Altitude         Up to 2000 m           Dimensions (mm)         598(W) ×937(H) ×906(D) (not including protrusions)	General Specifications nterface nsulation resistance Withstand voltage EMC	Waveform length Amplitude resolution Standard U: Attack Optional 1 Optional 2 Optional 3 Di Between input and c and chassis, input an Between input and c	n ISB ISB IS-	4096 words         16 bits         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         External Signal Input; External Control I/O; V/I Monitor Output         Complies with the EIA-RS-232 specifications         SCPI-1993, IEEE 488.2 compliant interface         Complies with CAN 2.0A or 2.0B based protocol         Complies with CAN 2.0A or 2.0B based protocol         DC 500 V, 30 MΩ or more         AC 1500 V or DC 2130 V, 1 minute         EN 61326-1 (Class A)         EN 61326-2 (Class A, Group 1)         EN 61000-3-2 (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 61000-1	Instrument IP Address, Subnet Mask
Operating humidity range         20 %rh to 80 % RH (no condensation)           Storage humidity range         90 % RH or less (no condensation)           Altitude         Up to 2000 m           Dimensions (mm)         598 (W)×937 (H)×906 (D) (not including protrusions)	General Specifications nterface nsulation resistance Withstand voltage EMC	Waveform length Amplitude resolution Standard L/ R8 Optional 1 C/ Optional 2 C/ Optional 3 D/ Between input and c and chassis, input ar Between input and c and chassis, input ar	n ISB ISS AN Xxternal S-232C PIB AN Bus Device Net Chassis, output ind output chassis, output ind output	4096 words         16 bits         Type A: Host, Type B: Slave, Speed: 1.1/2.0, USB-CDC / USB-TMCC         MAC Address, DNS IP Address, User Password, Gateway IP Address         External Signal Input; External Control I/Q; V/I Monitor Output         Complies with the EIA-RS-232 specifications         SCPI-1993, IEEE 488.2 compliant interface         Complies with CAN 2.0A or 2.0B based protocol         Complies with CAN 2.0A or 2.0B based protocol         DC 500 V, 30 MΩ or more         AC 1500 V or DC 2130 V, 1 minute         EN 61326-21/2-2 (Class A)         EN 61326-21/2-2 (Class A, Group 1)         EN 61000-3-2 (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 61000-3.2 (Class A, Group 1)         EN 61010-1         Indoor use, Overvoltage Category II	Instrument IP Address, Subnet Mask
Storage humidity range         90 % RH or less (no condensation)           Altitude         Up to 2000 m           Dimensions (mm)         598(W)×937(H)×906(D) (not including protrusions)	General Specifications Interface Insulation resistance Withstand voltage EMC	Waveform length Amplitude resolution Standard Ex Optional 1 G Optional 2 C/ Optional 3 D Between input and c and chassis, input ar Between input and c and chassis, input ar	n ISB AN Xternal S-232C PIB AN Bus Vevice Net Chassis, output Ind output Chassis, output Ind output	4096 words         16 bits         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         External Signal Input; External Control I/O; V/I Monitor Output         Complies with the EIA-R5-232 specifications         SCPI-1993, IEE 488.2 compliant interface         Complies with CAN 2.0A or 2.0B based protocol         Complies with CAN 2.0A or 2.0B based protocol         DC 500 V, 30 MΩ or more         AC 1500 V or DC 2130 V, 1 minute         EN 61326-1 (Class A)         EN 61326-21 (Class A)         EN 61326-1 (Class A, Group 1)         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 61000-1         Indoor use, Overvoltage Category II         0 °C to 40 °C	Instrument IP Address, Subnet Mask
Altitude         Up to 2000 m           Dimensions (mm)         598(W)×937(H)×906(D) (not including protrusions)	General Specifications Interface Insulation resistance Withstand voltage	Waveform length Amplitude resolution Standard U Ex Optional 1 G Optional 2 C/ Optional 3 D Between input and c and chassis, input ar Between input and c and chassis, input ar Operating environm Operating emperatu	n ISB AN ISC S232C PIB S232C PIB S232C PIB S232C C AN Bus Experise Net Chassis, output Ind output Chassis, output Ind output Chassis, output Ind output In	4096 words         16 bits         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         External Signal Input; External Control I/Q; V/I Monitor Output         Complies with the EIA-R5-232 specifications         SCPI-1993, IEEE 488.2 compliant interface         Complies with CAN 2.0A or 2.0B based protocol         Complies with CAN 2.0A or 2.0B based protocol         DC 500 V, 30 MΩ or more         AC 1500 V or DC 2130 V, 1 minute         EN 61326-1 (Class A)         EN 61326-2.1/-2.2 (Class A)         EN 61326-2.1/-2.2 (Class A, Group 1)         EN 61000-3.3 (Class A, Group 1)         EN 61000-3.4 (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 61010-1         Indoor use, Overvoltage Category II         0 °C to 40 °C         -10 °C to 70 °C	Instrument IP Address, Subnet Mask
Dimensions (mm) 598(W)×937(H)×906(D) (not including protrusions)	General Specifications Interface Insulation resistance Withstand voltage EMC	Waveform length         Amplitude resolution         Standard       U:         Example       Detection         Optional 1       G         Optional 2       C/         Optional 3       De         Between input and c       and chassis, input a	n ISB ISB ISS ISS ISS ISS ISS ISS ISS ISS	4096 words         16 bits         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         External Signal Input; External Control I/O; V/I Monitor Output         Complies with the EIA-RS-232 specifications         SCPI-1993, IEEE 488.2 compliant interface         Complies with CAN 2.0A or 2.0B based protocol         Complies with CAN 2.0A or 2.0B based protocol         DC 500 V, 30 MΩ or more         AC 1500 V or DC 2130 V, 1 minute         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/-4-8/-4-11 (Class A, Group 1)         EN 61000-1         Indoor use, Overvoltage Category II         0 °C to 40 °C         -10 °C to 70 °C         20 %rh to 80 % RH (no condensation)	Instrument IP Address, Subnet Mask
	General Specifications Interface Insulation resistance Withstand voltage EMC	Waveform length         Amplitude resolution         Standard       L/         Exponentiation       R3         Optional 1       G         Optional 2       C/         Optional 3       D/         Between input and c       and chassis, input a	n ISB ISB ISS ISS ISS ISS ISS ISS ISS ISS	4096 words         16 bits         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         External Signal Input; External Control I/O; V/I Monitor Output         Complies with the EIA-RS-232 specifications         SCPI-1993, IEEE 488.2 compliant interface         Complies with CAN 2.0A or 2.0B based protocol         Complies with CAN 2.0A or 2.0B based protocol         DC 500 V, 30 MΩ or more         AC 1500 V or DC 2130 V, 1 minute         EN 61326-1 (Class A)         EN 61326-2 1/-2-2 (Class A)         EN 61326-2 1/-2-2 (Class A, Group 1)         EN 61000-3-2 (Class A, Group 1)         EN 61010-1         Indoor use, Overvoltage Category II         0 °C to 40 °C         -10 °C to 70 °C         20 %rh to 80 % RH (no condensation)         90 % RH or less (no condensation)	Instrument IP Address, Subnet Mask
	General Specifications	Waveform length         Amplitude resolution         Standard       L/         Exponentiation       R3         Optional 1       G         Optional 2       C/         Optional 3       D/         Between input and c       and chassis, input a	n ISB ISB ISS ISS ISS ISS ISS ISS ISS ISS	4096 words         16 bits         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         External Signal Input; External Control I/Q; V/I Monitor Output         Complies with the EIA-R5-232 specifications         SCPI-1993, IEE 488.2 compliant interface         Complies with CAN 2.0A or 2.0B based protocol         Complies with CAN 2.0A or 2.0B based protocol         DC 500 V, 30 MΩ or more         AC 1500 V or DC 2130 V, 1 minute         EN 61326-1 (Class A)         EN 61326-2 I/-2-2 (Class A)         EN 61326-3 (Class A, Group 1)         EN 61000-3-2 (Class A, Group 1)         EN 61000-3-4 (Class A, Group 1)         EN 61000-3-7 (Class A, Group 1)         EN 61000-1         Indoor use, Overvoltage Category II         0 °C to 40 °C         -10 °C to 70 °C         20 %rh to 80 % RH (no condensation)         90 % RH or less (no condensation)         90 % RH or less (no condensation)         Up to 2000 m	Instrument IP Address, Subnet Mask

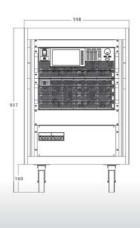
# ASR-6450-09/ASR-6600-12 Dimensions (mm)





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ASR-6450-13.5/ASR-6600-18 Dimensions (mm)





SPECIFICATIONS					
Model		ASR-645	0-13.5	ASR-6	5600-18
Input Ratings					
Power type		Three-phase Four-wire Y connecti	on		
Voltage range <sup>*1</sup>		380 Vac to 460 Vac ±10 % (Line V	'oltage)		
Frequency range Power factor <sup>*2</sup>		47 Hz to 63 Hz 0.95 or higher (typ.)			
Efficiency <sup>*2</sup>		80 % or higher			
Maximum power consumpt	ion	18 kVA or lower		24 kVA or lower	
AC Output					
Multi-phase output		Single-phase output	Polyphase output	Single-phase output	Polyphase output
Output capacity		13.5 kVA	1P3W: 9 kVA 3P4W: 13.5 kVA	18 kVA	1P3W: 12 kVA 3P4W: 18 kVA
Mode		1P2W	1P3W 3P4W (Y-connection)	1P2W	1P3W 3P4W (Y-connection)
Setting mode <sup>*3</sup>		 0.00 V to 175.0 V / 0.0 V to 350.0	Unbalance, Balanced V (sine and square wave), Setting Res	 colution: 0.01 V / 0.1 V	Unbalance, Balanced
Phase voltage	Setting Range <sup>°4</sup> Accuracy <sup>°5</sup>		to 1000 Vpp (triangle and arbitrary w		).1 Vpp / 1 Vpp
Line voltage setting range <sup>*6</sup>			1P3W: 0.00 V to 350.0 V / 0.00 V to 700.0 V 3P4W: 0.00 V to 303.1 V / 0.00 V to 606.2 V (sine and square wave) Setting Resolution: 0.01 V / 0.1 V 1P3W: 0.00 Vpp to 1000 Vpp / 0.00 Vpp to 2000 Vpp 3P4W: 0.00 Vpp to 866.0 Vpp / 0.00 Vpp to 1732 Vpp (triangle and arbitrary wave) Setting Resolution: 0.01 Vpp / 0.1 Vpp / 1 Vpp		1P3W: 0.00 V to 350.0 V / 0.00 V to 700.0 V 3P4W: 0.00 V to 303.1 V / 0.00 V to 606.2 V (sine and square wave) Setting Resolution: 0.01 V / 0.1 V 1P3W: 0.00 Vpp to 1000 Vpp / 0.00 Vpp to 2000 Vpp 3P4W: 0.00 Vpp to 866.0 Vpp / 0.00 Vpp to 1732 Vpp (triangle and arbitrary wave) Setting Resolution: 0.01 Vpp / 0.1 Vpp / 1 Vpp
Maximum current <sup>*7</sup>		135 A / 67.5 A	45 A / 22.5 A	180 A / 90 A	60 A / 30 A
Maximum current Maximum peak current <sup>*8</sup>		Four times of the maximum RMS		180 A / 90 A	60 A / 30 A
Load power factor*9		0 to 1 (leading phase or lagging p	hase, 45 Hz to 65Hz)		
Frequency	Setting range Accuracy	AC Mode: 15.00 Hz to 2000.0 Hz, ± 0.01% of set ± 0.005%	AC+DC Mode: 1.00 Hz to 2000.0 Hz	, Setting resolution: 0.01 Hz / 0.1 Hz	
Output on phase setting ran	Stability <sup>*10</sup>		selectable), 0.1° (1 Hz to 500 Hz), 1°	(500 Hz to 2000 Hz)	
Output off phase setting ran			selectable), 0.1° (1 Hz to 500 Hz), 1°		
Setting range of the phase a	ngle <sup>°12</sup>		3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1°		3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1°
Phase angle accuracy <sup>*13</sup>			45 Hz to 65 Hz: ±1.0° 15 Hz to 2000 Hz: ±2.0°		45 Hz to 65 Hz: ±1.0° 15 Hz to 2000 Hz: ±2.0°
DC Offset <sup>*14</sup>		± 20 mV (typ.)			
DC output (only single p	hase output)				
Output Capacity		13.5		18	s k₩
Mode	Setting Range	Floating output, the N terminal c	an be grounded +500.0 V, Setting Resolution: 0.01 V /	(01)	
Voltage	Accuracy <sup>°15</sup>	±( 0.3 % of set  + 0.3 V / 0.6 V)	+500.0 v, Setting Resolution. 0.01 v /	0.1 V	
Maximum current <sup>*16</sup>	recuracy	135 A / 67.5 A		180 A / 90 A	
Maximum peak current <sup>*17</sup>		Four times of the maximum curre	ent		
1 //	armonic Distortion, Output volta	<u> </u>			
Line regulation		±0.1% or less (Phase voltage) ±0.5 V / ±1.0 V (phase voltage, 0	to 100% via output torreited		
Load regulation <sup>10</sup> Distortion of Output <sup>*19</sup>			to 100%, via output terminal) @100.1 Hz to 500 Hz, <1 % @500.1 H	Hz to 2000 Hz	
Output voltage response tin	ne <sup>*20</sup>	Middle: 100 µs (typ.); Slow: 300 µ			
Ripple noise <sup>*21</sup>		0.5 Vrms / 1 Vrms (TYP)			
<ul> <li>*2. In the case of AC-INT mode</li> <li>*3. Can be only set in polyphas</li> <li>*4. For phase voltage setting in</li> <li>*5. For an output voltage of load</li> <li>*6. Line voltage only can be set</li> <li>*7. If the output voltage is high</li> <li>or 400 Hz or higher, and th</li> <li>*8. With respect to the capacite</li> <li>*9. External power injection or</li> <li>*16. If the output voltage is high</li> <li>is 40 degree or higher, the</li> <li>*17. Instantaneous within 3 ms</li> <li>*18. For an output voltage of 17</li> <li>*19. 50 % or higher of the ratee</li> <li>*20. For an output voltage of 11</li> <li>*21. For 5 Hz to 1 MHz compo</li> </ul>	e, the rate output voltage, resistance load a e mode. I polyphase output. In balance mode all ph V to 175 V / 20 V to 350 V, sine wave, an c in balance mode. I the name of the second second second second or-input rectifying load. Limited by the mar regeneration which is over short reverse p fiver than rated value, this is limited to satis anaximum current may decrease. S, limited by the maximum current at rate 5 V to 175 V / 150 V to 350 V, a load power d output voltage, the maximum current or 00 V / 200 V, a load power factor of 1, with nents in DC mode using the output termi	ower flow capacity is not available. sfy the power capacity. If there is the AC supe d output voltage. factor of 1, stepwise change from an output lower, AC and AC+DC modes, THD+N. For t respect to stepwise change from an output on nal on the rear panel.	de each phase are individually set. DC voltage setting 0V (AC+DC mode) and immpositions, the active current of AC+D mimmpositions , the active current of AC+1 current of 0 A to maximum current (or its he polyphase it is a specification for phase current of 0 A to the maximum current (or	C satisfies the maximum current. In the c DC satisfies the maximum current. And th reverse), using the output terminal on the voltage setting.	ase of 40 Hz or lower e ambient temperature rear panel.
Measured value display (	All accuracy of the measurement	function is indicated for 23 °C±5 °C			*6
	Resolution	Single-phas 0.01 V / 0.1 V	se output	Polyphas	se output <sup>*6</sup>
1 1		45 Hz to 65 Hz and DC: ± (0.5 %	of rdg + 0.5 V / 1 V)	45 Hz to 65 Hz: ± (0.5 % of rd	g + 0.5 V / 1 V)
Voltage	RMS value accuracy	15 Hz to 2000 Hz: ± (0.7 % of rdg	g + 1 V / 2 V)	15 Hz to 2000 Hz: ± (0.7 % of	rdg + 1 V / 2 V)
	AVG value accuracy	DC: ± ( 0.5 % of rdg  + 0.5 V / 1 V		DC: ± ( 0.5 % of rdg  + 0.5 V /	
	PEAK value accuracy <sup>®3</sup> Resolution	45 Hz to 65 Hz and DC: ±( 2 % of 0.01 A / 0.1 A	rag  + 1 V / 2 V)	45 Hz to 65 Hz: ±( 2 % of rdg	+ + V / 2 V)
	Resolution RMS value accuracy	45 Hz to 65 Hz and DC: ±(0.5 % of rdg 15 Hz to 2000 Hz: ±(0.7 % of rdg		45 Hz to 65 Hz: ±(0.5 % of rdg 15 Hz to 2000 Hz: ±(0.7 % of r	
	AVG value accuracy	DC: ± ( 0.5 % of rdg  + 0.6 A / 0.4	, ,	DC: ± ( 0.5 % of rdg  + 0.3 A /	
	PEAK value accuracy <sup>*5</sup>	45 Hz to 65 Hz and DC: ±( 2 % of	frdg  + 3 A / 1.5 A)	45 Hz to 65 Hz: ±( 2 % of rdg	+ 1.5 A / 0.75 A)

Madel		I	ACD (450.13.5	ACD ((00.19			
Model			ASR-6450-13.5	ASR-6600-18			
	Active (W)	Resolution	0.1 W / 1 W / 10 W				
	( )	Accuracy <sup>*9</sup>	±(2 % of rdg + 6 W)	±(2 % of rdg + 2 W)			
ower <sup>°7°8</sup>	Apparent (VA)	Resolution	0.1 VA / 1 VA / 10VA	<b>r</b>			
ower		Accuracy	±(2 % of rdg + 9 VA)	±(2 % of rdg + 3 VA)			
Reactive (V		Resolution	0.1 VAR / 1 VAR / 10VAR				
Accuracy		Accuracy <sup>*10</sup>	±(2 % of rdg + 9 VAR)	±(2 % of rdg + 3 VAR)			
		Range	0.000 to 1.000				
ower lactor		Resolution	0.001				
Harmonic voltage		Range	Up to 100th order of the fundamental wave				
Effective value (rms)		Full Scale	200 V / 400 V, 100%				
Percent (%)		Resolution	0.01 V /0.1 V, 0.1%				
AC-INT and 50/60 Hz or	nlv)* <sup>11</sup>	Accuracy <sup>*12</sup>	Up to 20th: ±(0.2 % of rdg + 0.5 V / 1 V)				
AC-INT and SU/OU HZ OF	(iiy)	Accuracy	21th to 100th: ±(0.3 % of rdg + 0.5 V / 1 V)				
		Range	Up to 100th order of the fundamental wave				
Harmonic current		Full Scale	189 A / 94.5 A, 100%	63 A / 31.5 A, 100%			
Effective value (rms)		Resolution	0.01 A / 0.1 A, 0.1%				
Percent (%)	L )*11		Up to 20th: ±(1 % of rdg + 3 A / 1.5 A)	Up to 20th: ±(1 % of rdg + 1 A / 0.5 A)			
AC-INT and 50/60 Hz or	nly)	Accuracy <sup>*13</sup>	21th to 100th: $\pm(1.5\% \text{ of rdg} + 3\text{ A} / 1.5\text{ A})$	21th to 100th: $\pm(1.5\% \text{ of } \text{rdg} + 1 \text{ A} / 0.5 \text{ A})$			
*5. The accuracy is for out *6. In the polyphase output *7. For an output voltage of DC or an output freque	the case that the output tput waveform DC or si ut, these are the specifi	ut current is 5% to 100 ine wave only. cations for each phase utput current in the rar	*12. For an output voltage of 10 V	onform to the IEC or other standard. Phase Voltage and Phase Current.			
Others							
Protections			UVP, OVP, OCP, OTP, OPP, Fan Fail, Peak and RMS Current Limit				
Display			TFT-LCD, 7 inch				
Memory function			Store and recall settings, Basic settings: 10				
·	Number of mem	ories	253 (nonvolatile)				
Arbitrary Wave	Waveform length		4096 words				
	Amplitude resolu	tion	16 bits				
General Specifications	:						
	1	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, I	nstrument ID Address Subnet Mask			
	Standard	External	External Signal Input; External Control I/O; V/I Monitor Output	instanten naaress, subtre musik			
nterface		RS-232C	External Signal Input; External Control I/O; V/I Monitor Output Complies with the EIA-RS-232 specifications				
incinace	Optional 1	GPIB	SCPI-1993, IEEE 488.2 compliant interface				
	Optional 2	CAN Bus	Complies with CAN 2.0A or 2.0B based protocol				
	Optional 2 Optional 3		Complies with CAN 2.0A or 2.0B based protocol				
nsulation resistance		Device Net	Complies with CAN 2.04 of 2.06 based protocol				
	and chassis, inpu		DC 500 V, 30 M $\Omega$ or more				
Withstand voltage	Between input ar and chassis, inpu	nd chassis, output it and output	AC 1500 V or DC 2130 V , 1 minute				
EMC			EN 61326-1 (Class A) EN 61326-2-1/-2-2 (Class A) EN 61000-3-2 (Class A, Group 1) EN 61000-3-3 (Class A, Group 1) EN 61000-4-2/-4-3/-4-4/-4-5/-4-6/-4-8/-4-11 (Class A, Group 1) EN 55011 (Class A, Group1)				
Safety			EN 61010-1				
nvironment	Operating enviro	nment	Indoor use, Overvoltage Category II				
	Operating tempe	rature range	0 °C to 40 °C				
			-10 °C to 70 °C				
Storage temperatur Operating humidity Storage humidity r		-	20 %rh to 80 % RH (no condensation)				
		, 0	90 % RH or less (no condensation)				
		2					
	Altitude		Up to 2000 m				
Dimensions (mm)	Altitude						
Dimensions (mm) Weight	Altitude		Up to 2000 m 598(W)×1116(H)×906(D) (not including protrusions) Approx. 200 kg				

### **ORDERING INFORMATION**

ACCESSORIES       GET-006         Input terminal cover, Output terminal cover,       ASR-000         Copper plate for delta connection input,       GRA-451         Copper plate for delta connection input,       GRA-451         Copper plate for delta connection input,       GPW-00         Copper plate for 1P output,       GPW-01         CPA 451 E. Pack mount adapter (EI0)       GPW-01	ASR-6450 ASR-6600 ASR-6450-09 ASR-6600-12 ASR-6450-13.5 ASR-6600-18	4.5kVA High-Performance AC/DC Power Supply 6kVA High-Performance AC/DC Power Supply 9kVA AC/DC Rack Type Power Source 12kVA AC/DC Rack Type Power Source 13.5kVA AC/DC Rack Type Power Source 18kVA AC/DC Rack Type Power Source	ASR-003 ASR-004 ASR-005 ASR-C00 GTL-232 GTL-248 For ASR-6
	Input terminal of Copper plate fo Copper plate fo Copper plate fo Copper plate fo	r delta connection input, r single phase and Y connection input, r delta connection input, r 1P output,	GET-006 ASR-006 GRA-451- GRA-451- GPW-008 GPW-012 GPW-012

### Specifications subject to change without notice. ASR-6000ID1BH **OPTION ACCESSORIES** GPIB Interface Card DeviceNet Interface Card CAN BUS Interface Card Modbus TCP feature RS-232C Cable, approx. 2M GPIB Cable, approx. 2M 50/ASR-6600 use only : Universal Extension External Parallel Cable Rack mount adapter (EIA) Rack mount adapter (JIS) 6RV3 Power Cord; 10AWG/3C, 3m Max Length, , RV5-5\*3P, RV5-5\*3P UL Type 6RV5 UL Power Cord; 10AWG/5C, 3m, RV5-5\*5P,RV5-5\*5P UL Type 6RVV5 VDE Power Cord; 2.5mm2/5C, 3m Max Length, RVS3-5\*5P, RVS3-5\*5P VDE Type GPW-013 GRVT5 PSE Power Cord; 2.0mm2/SC, 3m Max Length, RVS2-5\*5P, RVS2-5\*5P GPW-014 GRV4 UL Power Cord; 10AWG/4C, 3m, RV5-5\*4P, RV5-5\*4P UL TYPE GPW-015 GRVV4 VDE Power Cord; 2.5mm2/4C, 3m Max Length, RVS3-5\*4P, RVS3-5\*4P VDE Type

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