

INSTRUCTION MANUAL

AC/DC POWER SOURCE

ASR-RKSERIES

ASR902-351RK ASR123-351RK ASR133-351RK ASR183-351RK ASR243-351RK ASR303-351RK ASR363-351RK

This instruction manual is a supplementary manual for the ASR-RK series. For detailed operation information, please refer to the instruction manual for the ASR-4.5k / 6k series.



About Brands and Trademarks

"TEXIO" is the product brand name of our industrial electronic devices.

All company names and product names mentioned in this manual are the trademark or the registered trademark of each company or group in each country and region.

■ About the Instruction Manual

The latest version of the instruction manual is posted on our website (https://www.texio.co.jp/

In order to be environmentally friendly and reduce waste, we are gradually discontinuing the use of paper or CD manuals that come with our products.

Even if there is a description in the instruction manual that the product is included, it may not be included.

■ About firmware version

This user manual is required firmware version 1.03 or higher.

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■ Preface

To use the product safely, read instruction manual to the end. Before using this product, understand how to correctly use it. If you read the manuals but you do not understand how to use it, ask us or your local dealer. After you read the manuals, save it so that you can read it anytime as required.

■ Pictorial indication

The manuals and product show the warning and caution items required to safely use the product. The following pictorial indication is provided.

Pictorial indication	
<u>^</u>	Some part of this product or the manuals may show this pictorial indication. In this case, if the product is incorrectly used in that part, a serious danger may be brought about on the user's body or the product. To use the part with this pictorial indication, be sure to refer to the manuals.
WARNING	If you use the product, ignoring this indication, you may get killed or seriously injured. This indication shows that the warning item to avoid the danger is provided.
CAUTION	If you incorrectly use the product, ignoring this indication, you may get slightly injured or the product may be damaged. This indication shows that the caution item to avoid the danger is provided.

Please be informed that we are not responsible for any damages to the user or to the third person, arising from malfunctions or other failures due to wrong use of the product or incorrect operation, except such responsibility for damages as required by law.





■ Do not remove the product's covers and panels

Never remove the product's covers and panels for any purpose.

Otherwise, the user's electric shock or fire may be incurred.

■ Warning on using the product

Warning items given below are to avoid danger to user's body and life and avoid the damage or deterioration of the product. Use the product, observing the following warning and caution items.

■ Warning items on power supply

• Power supply voltage

The rated power supply voltage of the product is single phase or three phase, and the phase voltage is AC200V to AC240V.

Power cord

(IMPORTANT) This product does not include a power cord.Please prepare a power cord that matches the power rating.

Protective fuse

If an input protective fuse is blown, the product does not operate. For a product with external fuse holder, the fuse may be replaced. As for how to replace the fuse, refer to the corresponding chapter in the instruction manual. If no fuse replacement procedures are indicated, the user is not permitted to replace it. In such case, keep the case closed and consult us or your local dealer. If the fuse is incorrectly replaced, a fire may occur.

■ Warning item on Grounding

If the product has the GND terminal on the front or rear panel surface, be sure to ground the product to safely use it.

■ Warnings on Installation environment

Operating temperature and humidity

Use the product within the operating temperature indicated in the "rating" temperature column. If the product is used with the vents of the product blocked or in high ambient temperatures, a fire may occur. Use the product within the operating humidity indicated in the "rating" humidity column. Watch out for condensation by a sharp humidity change such as transfer to a room with a different humidity. Also, do not operate the product with wet hands. Otherwise, an electric shock or fire may occur.

Use in gas

Use in and around a place where an inflammable or explosive gas or steam is generated or stored may result in an explosion and fire. Do not operate the product in such an environment. Also, use in and around a place where a corrosive gas is generated or spreading causes a serious damage to the product. Do not operate the product in such an environment.

Installation place

Do not insert metal and inflammable materials into the product from its vent and spill water on it. Otherwise, electric shock or fire may occur.

■ Do not let foreign matter in

Do not insert metal and inflammable materials into the product from its vent and spill water on it. Otherwise, electric shock or fire may occur.

■ Warning item on abnormality while in use

If smoke or fire is generated from the product while in use, stop using the product, turn off the switch, and remove the power cord plug from the outlet. After confirming that no other devices catch fire, ask us or your local dealer.

■ Input / Output terminals

Maximum input to terminal is specified to prevent the product from being damaged. Do not supply input, exceeding the specifications that are indicated in the "Rating" column in the instruction manual of the product. Also, do not supply power to the output terminals from the outside. Otherwise, a product failure is caused.

Calibration

Although the performance and specifications of the product are checked under strict quality control during shipment from the factory, they may be deviated more or less by deterioration of parts due to their aging or others.

It is recommended to periodically calibrate the product so that it is used with its performance and specifications stable. For consultation about the product calibration, ask us or your local dealer.

■ Daily Maintenance

When you clean off the dirt of the product covers, panels, and knobs, avoid solvents such as thinner and benzene. Otherwise, the paint may peel off or resin surface may be affected. To wipe off the covers, panels, and knobs, use a soft cloth with neutral detergent in it.

During cleaning, be careful that water, detergents, or other foreign matters do not get into the product.

If a liquid or metal gets into the product, an electric shock and fire are caused.

During cleaning, remove the power cord plug from the outlet.

Use the product correctly and safely, observing the above warning and caution items. Because the instruction manual indicates caution items even in individual items, observe those caution items to correctly use the product.

If you have questions or comments about the manuals, ask us or E-Mail us.

1.GETTING STARTED

This chapter describes the ASR-RK series power supply in a nutshell, including its main features and front / rear panel introduction.

This manual is a supplementary manual for the ASR-RK series.

For detailed operation information, please refer to the ASR-4.5k / 6k instruction manual.

ASR902-351RK ASR133-351RK ASR183-351RK ASR183-351RK ASR123-351RK ASR183-351RK ASR18

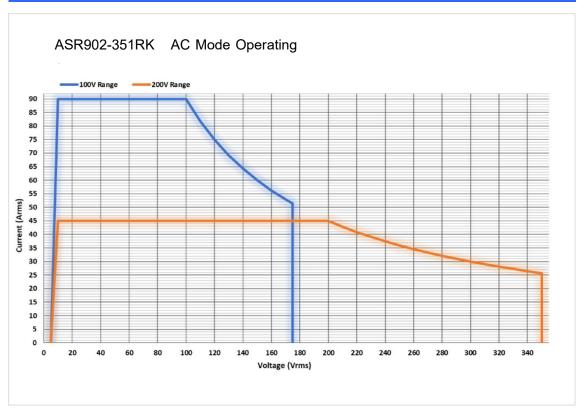
1-1. ASR Series Overview

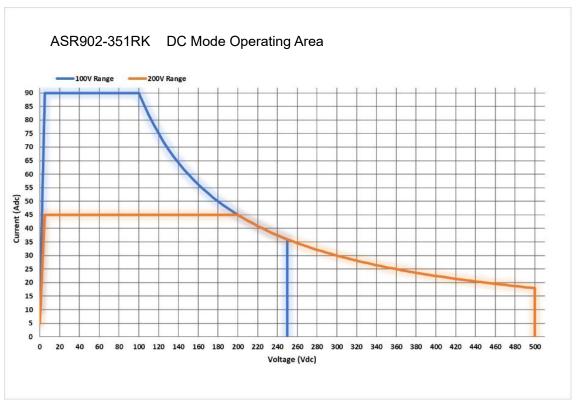
1-1-1. Series lineup

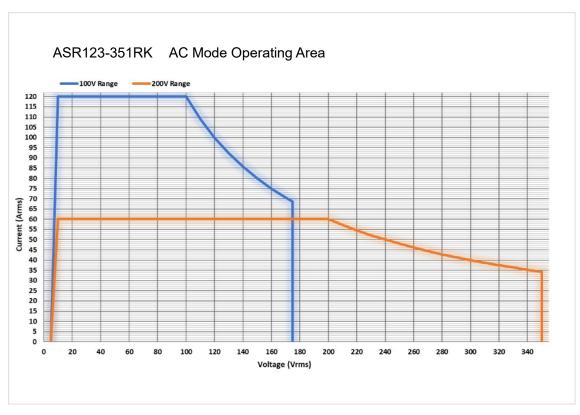
The ASR series consists of 5 models, differing in capacity. Note that throughout the user manual, the term "ASR-RK" refers to any of the models, unless stated otherwise.

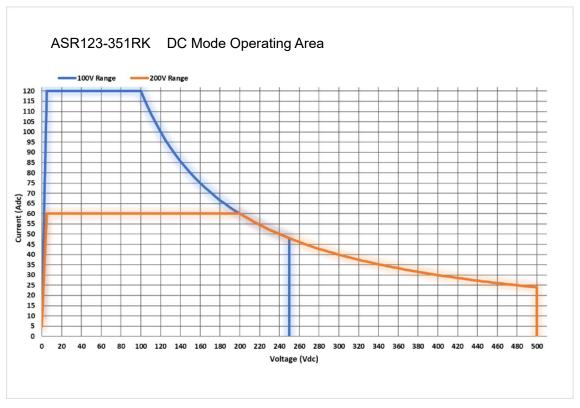
1P Output Condition			
Model Name	Power Rating	Max. Output Current	Max. Output Voltage
ASR902-351RK	9000VA	90 / 45A	350Vrms / 500Vdc
ASR123-351RK	12000VA	120 / 60A	350Vrms / 500Vdc
ASR133-351RK	13500VA	135 / 67.5A	350Vrms / 500Vdc
ASR183-351RK	18000VA	180 / 90A	350Vrms / 500Vdc
ASR243-351RK	24000VA	240 / 120A	350Vrms / 500Vdc
ASR303-351RK	30000VA	300 / 150A	350Vrms / 500Vdc
ASR363-351RK	36000VA	360 / 180A	350Vrms / 500Vdc
1P3W Output Conditi	ion		
Model Name	Power Rating	Max. Output Current	Max. Output Voltage
ASR902-351RK	6000VA	30 / 15A	700Vrms / 1000Vdc
ASR123-351RK	8000VA	40 / 20A	700Vrms / 1000Vdc
ASR133-351RK	9000VA	45 / 22.5A	700Vrms / 1000Vdc
ASR183-351RK	12000VA	60 / 30A	700Vrms / 1000Vdc
ASR243-351RK	16000VA	80 / 40A	700Vrms / 1000Vdc
ASR303-351RK	20000VA	100 / 50A	700Vrms / 1000Vdc
ASR363-351RK	24000VA	120 / 60A	700Vrms / 1000Vdc
3P Output Condition	(Pre phase)		
Model Name	Power Rating	Max. Output Current	Max. Output Voltage
ASR902-351RK	3000VA	30 / 15A	350Vrms / 500Vdc
ASR123-351RK	4000VA	40 / 20A	350Vrms / 500Vdc
ASR133-351RK	4500VA	45 / 22.5A	350Vrms / 500Vdc
ASR183-351RK	6000VA	60 / 30A	350Vrms / 500Vdc
ASR243-351RK	8000VA	80 / 40A	350Vrms / 500Vdc
ASR303-351RK	10000VA	100 / 50A	350Vrms / 500Vdc
ASR363-351RK	12000VA	120 / 60A	350Vrms / 500Vdc

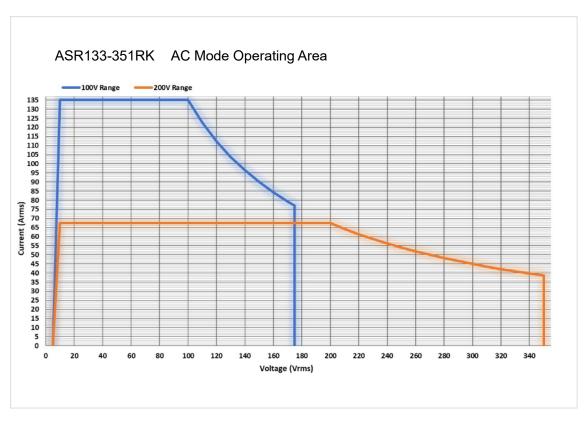
1-1-2. Operating Area

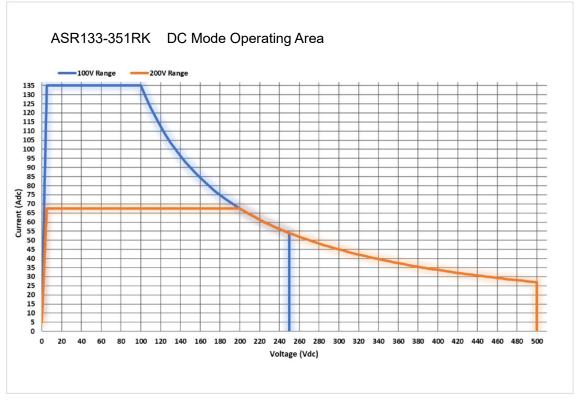


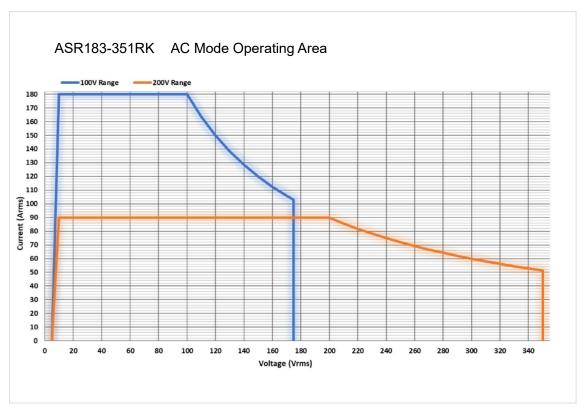


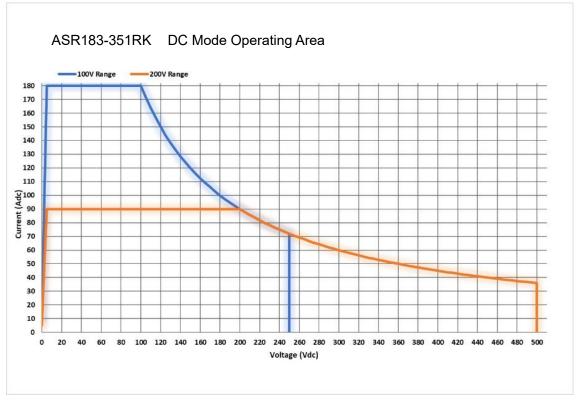




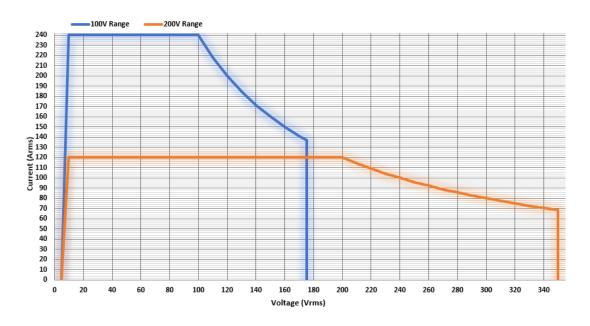




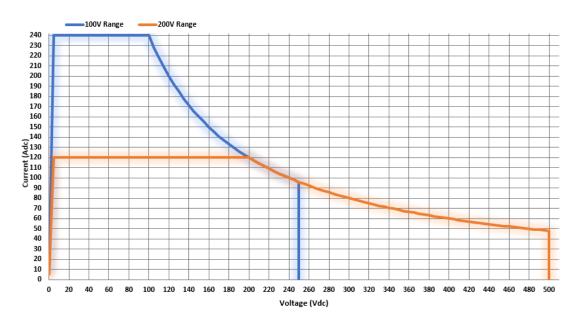


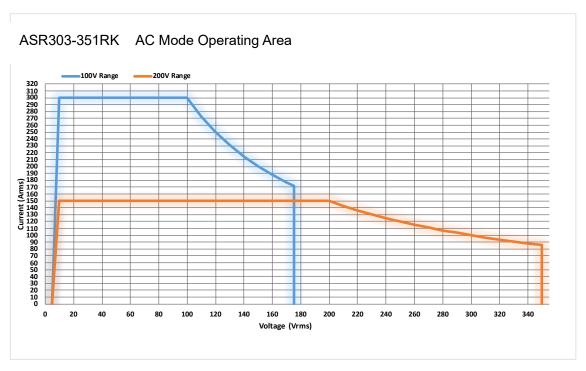


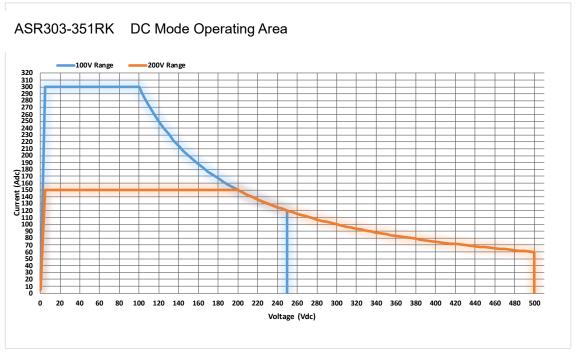
ASR243-351RK AC Mode Operating Area



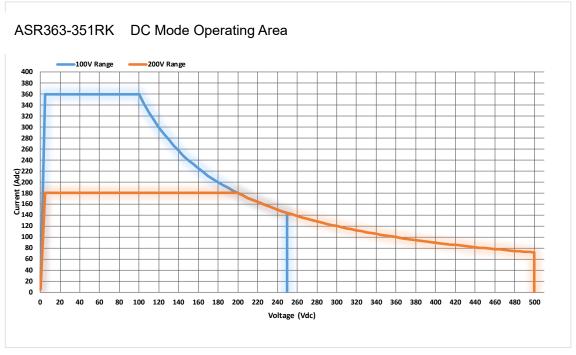
ASR243-351RK DC Mode Operating Area











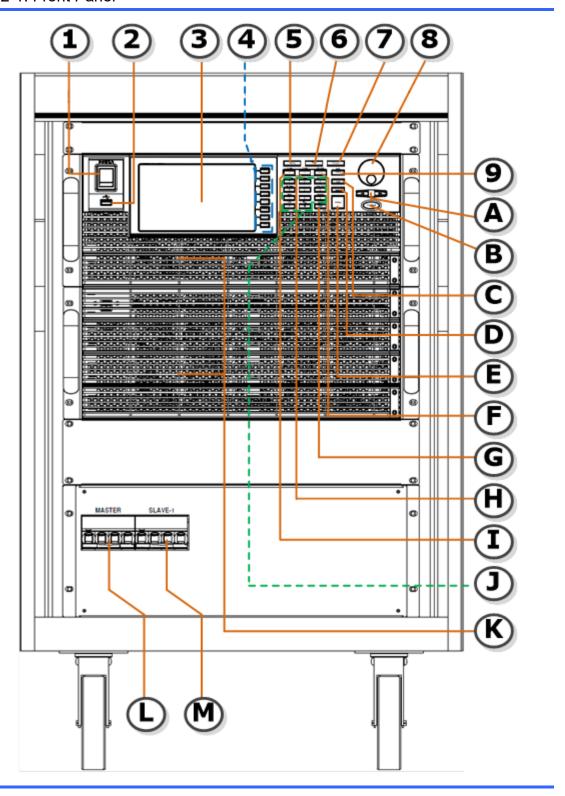
1-1-3. Accessories

Before using the ASR-RK power source unit, check the package contents to make sure all the standard accessories are included.

Standard Accessories	Part number	Description
		Safety guide
	62SR-6KDSC201 62SR-6KDSC301	Input terminal cover
	62SR-6KDSC501 62SR-6KDSC601	Output terminal cover
	GTL-246	USB cable (USB 2.0 Type A - Type B cable, approx. 1.2M)
Optional Accessories	Part number	Description
	GTL-232	RS-232C cable, approx. 2M
	CB-2420P	GP-IB cable, approx. 2M
	ASR-003	GP-IB interface card

1-2. Appearance

1-2-1. Front Panel



Item Index	Description
1	Power switch button
2	USB interface connector (A Type)
3	LCD screen
4	Function keys (blue zone)
5	Menu key
6	Test key
7	Preset key
8	Scroll wheel
9	Range key / Output mode key
Α	Arrow keys
В	Output key
С	Shift key
D	Cancel key
Е	Enter key
F	Irms / IPK-Limit button
G	Lock / Unlock button
Н	F / F-Limit button
1	V / V-Limit button
J	Numerical Keypad with additional "Shift + key" shortcut functions (green
J	zone)
K	Air inlets
L	Master Circuit Breaker
M	Slave Circuit Breaker

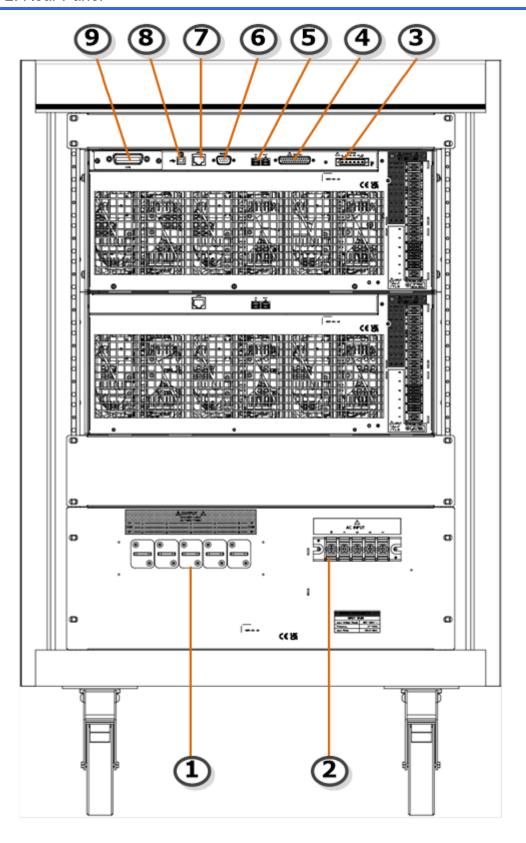
Item	Description	
Power Switch	POWER	Turn on the mains power
USB A Port		The USB port is used for data transfers and upgrading software. Also, it is available for screenshot hardcopy.
	!!\text{! It supports FA	AT32 format with maximum 32G storage.

LCD Screen	_	Displays the setting and measured values or menu system
Function Keys	F1 F2 F3 F4 F5 F6	Assigned to the functions displayed on the right side of the screen.
Menu Key	Menu	Enters the Main menu or goes back to one of the display modes.
Test Key	Test	Puts the instrument into the Sequence and Simulation control mode.
Preset Key	Preset	Puts the instrument into Preset mode.
Arrow Keys		The arrow keys are used to select the digit power of a value that is being edited.
Range Key	Mode Range	Switches between the 100V, 200V and AUTO ranges
Output Mode	Shift + Mode Range	Selects between the AC+DC-INT, AC-INT, DC-INT, AC+DC-EXT, AC-EXT, AC+DC-ADD, AC-ADD, AC+DC-Sync, AC-Sync and AC-VCA modes.
Scroll Wheel		Used to navigate menu items or for increment / decrement values one step at a time.
Output Key	Output	Turns the output on or off.
Shift Key	Shift	Turns on the shift state, which enables shortcut operations with an icon shift indicated on the top status bar. The shift state, which allows continuous shortcut operations, is kept until another press on shift key again.
	When perfo	orming shortcut operations, press shift key

followed by another shortcut function key. Do Not press both shift key and shortcut function key simultaneously.

Cancel Key		Used to cancel function setting menus or
•	Cancel	dialogs.
Enter Key		Confirms selections and settings.
	Enter	
	_	
Irms	IPK-Limit I rms	Used for setting the maximum output current.
IPK-Limit		Used to set the peak output current limit value.
	Shift + IPK-Limit	occa to cot and poart carpat carroin minit value.
	Irms	
Lock/Unlock Key	<u>Unloc</u> k	Used to lock or unlock the front panel keys
	Lock	except output key. Simply press to lock, whilst
	: Long Push	long press to unlock.
F	F-Limit	Used for setting the output frequency (DC
	F	mode N/A).
F-Limit	Shift	Used for setting the output frequency limit
	F-Limit	value (DC mode N/A).
	F	
V	V-Limit	Used for setting the output voltage.
V-Limit	Shift +	Used for setting the output voltage limit value.
	V-Limit	
 Keypad	Co-Proce Phase PK C.II 7 8 9	Used to input power of a value directly. The 🚊
	4 5 6 Wise 1450ccy 1 2 3	key is used to input decimal / plus or minus.
On Phase	Shift	Sets the on phase for the output voltage.
	On Phase	
	7	
Off Phase	Shift	Sets the off phase for the output voltage.
	Off Phase	
	4	
Output Waveform	Shift +	Selects between the Sine, Square, Triangle
	Wave	and ARB 1~253 waveforms
		(not available for DC-INT, AC+DC-EXT and

		AC-EXT).
Local Mode	Shift +	Switches operation back to local mode from remote mode.
IPK CLR	Shift + IPK CLR	Used to clear peak output current value.
ALM CLR	Shift + ALM CLR	Clears alarms.
Hardcopy Key	Shift + Hardcopy 3	Used to take a screenshot. Make sure an USB flash disk in well inserted before the action.
Output Phase	Shift + Phase 8	Used to prompt the output phase window where 1P2W, 1P3W and 3P4W modes are available for selection.
Master Circuit Breaker	MASTER	Input power circuit breaker of ASR-RK Master unit
Slave Circuit Breaker	SLAVE-1	Input power circuit breaker of ASR-RK Slave unit



Item Index	Description
1	Output terminal
2	AC power input terminal
3	Remote sensing input terminal
4	External I/O connector
5	External IN/OUT connection in parallel function
6	RS232 connector
7	Ethernet (LAN) connector
8	USB interface connector (B Type)
9	Optional interface Slot ■ GPIB card (ASR-003)

Item	Description	
Output Terminal		Output terminal (M8 screw nut and M3 screw)
AC Power Input Terminal	AC INPUT	AC inlet (depend on models) (M5 screw type, 2 ~ 14 AWG, screw torque value: 2 ~ 2.5 N·m)
		(M8 screw type, 2/0 ~ 10 AWG, screw torque value: 3.5 ~ 6 N.m)
Remote Sensing Input Terminal	SENSING LI NI L2 N2 L3 N3	Remote sensing input terminal is for compensation of load wire voltage drop. (M2.5 screw type, 12 ~ 30 AWG,
		screw torque value: 0.5N*m,
		strip length: 7 ~ 8mm)
External Control I/O	EXT VO	Used to control ASR-RK externally by using the
Connector	(00000000000)	logic signal and monitor Sequence function
		status.
External IN/OUT	IN OUT S M	The IN (Slave) and OUT (Master) ports are
Connection in Parallel		used for connection with external unit in
Function		parallel function.
RS232C Connector	RS232C	The RS-232C connector for controlling the
	0000	ASR-RK remotely.
Ethernet LAN Port	I LAN —	The Ethernet port is used for remote control.

USB B-type Port



USB port for controlling the ASR-RK remotely.

Optional GPIB Connector



The optional GPIB connector for controlling the ASR-RK remotely.

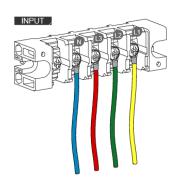
2.OPERATION

We take the illustration of 3P4W Input Connection here for example. Please refer to page 20 of the Input Terminal Connection chapter for the detailed information covering the 2 different connection methods.

2-1. Power Up and Procedure

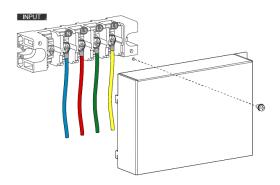
Steps

- Connect the AC power cords to the AC input terminals.
- Red⇒L3
- Green⇒L2
- Yellow⇒L1
- Blue⇒Neutral

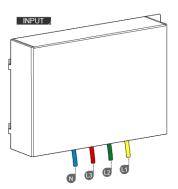


Note

- Power input cords are not included in this product.
- The input & output terminals necessitate connectivity through ring-type connectors.
- Install the protective lid of power input terminals followed by fastening the single screw to fix the lid firmly into place.



 The AC power cords of 3P4W input are connected with the AC input terminals equipped with protective lid completely.



4. Turn ON circuit breakers in the sequence of MASTER followed by SLAVE. In the case of multiple SLAVE units in parallel

connection, turn ON each circuit breaker of SLAVE in proper sequence, e.g., SLAVE-1 -> SLAVE-2, and so forth.



 Press the POWER key. The welcome screen of TEXIO will be displayed followed by self-checking procedure before the continuous mode screen appears with the settings loaded.





- If the warning message of "Parallel Communication Error" appears in the screen display, turn Off both POWER key and circuit breakers followed by repeating the appropriate power up procedure above.
- Contact local dealer in your region if the warning message of "Parallel Communication Error" can Not be solved after repeating the power up procedure.
- The power supply takes around 35 seconds to fully turn on and shutdown.
- Do not turn the power on and off quickly, otherwise the unit will be damaged due to insufficient time for self-checking procedure.
 It is recommended to observe an interval of at least 10 seconds between power on and off.

2-2. Input Terminal Connection

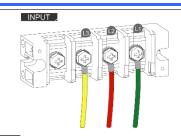
Background

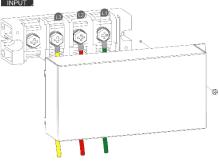
Basically, the input terminal, which is located in the rear panel of unit, can be connected through 2 methods: 3P4W and 3P3W connections. Depending on varied input methods, use the corresponding power cords for connection. Refer to the following chapters for details of each connection.

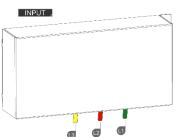
2-2-1. Input Terminal 3P3W Connection

Steps

- Connect the AC power cords to the AC input terminals.
- Yellow⇒L3
- Red⇒L2
- Green⇒L1
- Install the protective lid of power input terminals followed by fastening the single screw to fix the lid firmly into place.
- The AC power cords of 3P3W input are connected with the AC input terminals equipped with protective lid completely.





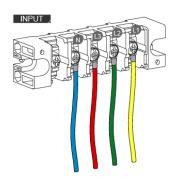


Note

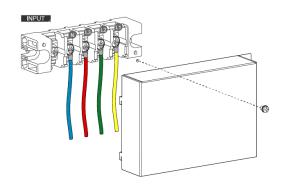
- Power input cords are not included in this product.
- The input & output terminals necessitate connectivity through ringtype connectors.
- The diagram is only for reference on wiring method. Please proceed to wiring in accordance with the color definitions in your local country.

2-2-2. Input Terminal 3P4W Connection

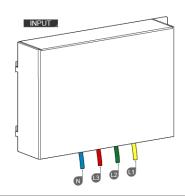
- Connect the AC power cords to the AC input terminals.
- Red⇒L3
- Green⇒L2
- Yellow⇒L1
- Blue⇒Neutral



 Install the protective lid of power input terminals followed by fastening the single screw to fix the lid firmly into place.



3. The AC power cords of 3P4W input are connected with the AC input terminals equipped with protective lid completely.



Note

- Power input cords are not included in this product.
- The input & output terminals necessitate connectivity through ring-type connectors.
- The diagram is only for reference on wiring method. Please proceed to wiring in accordance with the color definitions in your local country.

2-3. Output Terminal Connection

Background

The output terminal can output power in three modes: 1P2W, 1P3W and 3P4W. Select applicable output mode, via panel configurations, in accordance with varied applications.



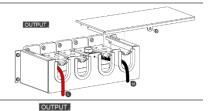
Be aware of dangerous voltages. Ensure that the power to the instrument is disabled before handling the power supply output terminals. Failing to do so may lead to electric shock.

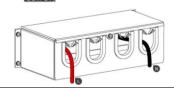


After configuring phase settings via the front panel, please make sure the cords connection on the rear panel is corresponding to the set configuration.

2-3-1. 1P2W Output Connection

- 1. Disconnect the ASR-RK unit from the mains power socket and turn the power switch off before wires connection.
- Connect the output wires to the AC output terminals as follows:
 - Red⇒Line (L)
 - Black⇒Neutral (N)
- Install the protective cover of power output terminals followed by fastening the 4 screws to fix the protective cover firmly into place.
- The protective cover of power output terminals is well installed and fixed on the rear panel.
- OUTPUT.
- Install the protective lid of power output terminals followed by fastening the single screw to fix the lid firmly into place.
- The AC power cords of 1P2W output are connected with the AC output terminals equipped with protective cover and lid





completely.

Note

Grounded Neutral Output for 1P2W output only: ASR-RK allows for a grounded return on the neutral output. It is suit for the medical industry that required between ground with neutral is 0 V essentially. And possible to mitigate ground loops that is ideal for reduce ground noise and isolate sensitive equipment from the effects of ground loops.



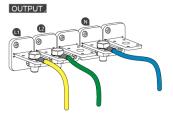
Because the neutral has been referenced to the chassis ground, be careful electric shock by yourself.

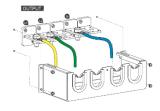
Note

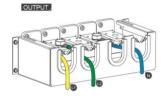
- Power output cords are not included in this product.
- The input & output terminals necessitate connectivity through ring-type connectors.
- The diagram is only for reference on wiring method. Please proceed to wiring in accordance with the color definitions in your local country.

2-3-2. 1P3W Output Connection

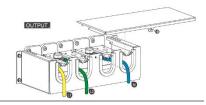
- 1. Disconnect the ASR unit from the mains power socket and turn the power switch off before wires connection.
- Connect the output wires to the AC output terminals as follows:
 - Yellow⇒Line(L1)
 - Green⇒Line(L2)
 - Blue⇒Nutral(N)
- Install the protective cover of power output terminals followed by fastening the 4 screws to fix the protective cover firmly into place.
- The protective cover of power output terminals is well installed and fixed on the rear panel.



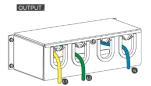




 Install the protective lid of power output terminals followed by fastening the single screw to fix the lid firmly into place.



The AC power cords of 1P3W
 output are connected with the AC
 output terminals equipped with
 protective cover and lid completely.

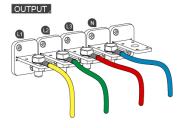


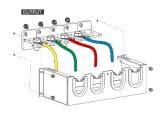
Note

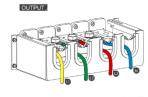
- Power output cords are not included in this product.
- The input & output terminals necessitate connectivity through ringtype connectors.
- The diagram is only for reference on wiring method. Please proceed to wiring in accordance with the color definitions in your local country.

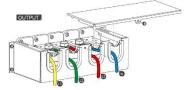
2-3-3. 3P4W Output Connection

- Disconnect the ASR unit from the mains power socket and turn the power switch off before wires connection.
- Connect the output wires to the AC output terminals as follows:
 - Yellow⇒Line(L1)
 - Green⇒Line(L2)
 - Red⇒Line(L3)
 - Blue⇒Nutral(N)
- Install the protective cover of power output terminals followed by fastening the 4 screws to fix the protective cover firmly into place.
- The protective cover of power output terminals is well installed and fixed on the rear panel.
- Install the protective lid of power output terminals followed by fastening the single screw to fix the lid firmly into place.

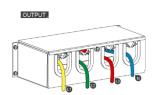








The AC power cords of 3P4W
 output are connected with the AC
 output terminals equipped with
 protective cover and lid completely.



Note

- Power output cords are not included in this product.
- The input & output terminals necessitate connectivity through ringtype connectors.
- The diagram is only for reference on wiring method. Please proceed to wiring in accordance with the color definitions in your local country.

2-4. Remote Sensing, EXT I/O and Interface Connection

Remote Sensing

Remote sense is used to compensate for the voltage drop seen across load cables due to resistance inherent in the load cables. The remote sense function can compensate a maximum of 5% of the output voltage and all of output frequency. Based on different 3 output methods, the connections of remote sense vary accordingly. Refer to the following chapters of remote sense connections for each power output method. For information on remote sense connections for each power supply output method, refer to the ASR4.5k / 6k instruction manual. Dangerous voltages. Ensure that the power to the instrument is disabled before handling the power supply output terminals. Failing to do so may lead to electric shock.



Note

To minimize noise pickup or radiation, the load wires and remote sense wires should be twisted-pairs of the shortest possible length. Shielding of the sense leads may be necessary in high noise environments. Where shielding is used, connect the shield to the chassis via the rear panel ground screw. Even if noise is not a concern, the load and remote sense wires should be twisted-pairs to reduce coupling, which might impact the stability of the power supply. The sense leads should be separated from the power leads.

EXT I/O & Interface

Since EXT I/O & Interface connections relate to several types and connectors, refer to User Manual of ASR 4.5k / 6k for more details when necessary.

3.APPENDIX

3-1. Firmware Update

Background

The ASR series firmware can be upgraded using the USB A port on the front panel. See your local distributor or the TEXIO website for the latest firmware information.

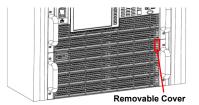
https://www.texio.co.jp



- Both Master and Slave ASR units are required to be plugged in USB flash drives with the identical firmware version in order to complete update process simultaneously.
- To be free from unexpected erroneous issues, please prepare, for example, 4 USB flash drives for 1 Master and 3 Slave units in parallel connection. DO NOT update partial ASR units, e.g., only update Master but without Slave units.
- Ensure the DUT is not connected.
- Ensure the output is surely off.

Steps

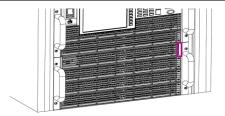
 Since the USB A-type port is hidden within a plastic frame in Slave unit, please identify the removable cover in the right-side corner of front panel as the figure shown below.



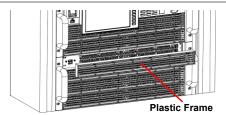
2. Loosen the two screws on the removable cover.



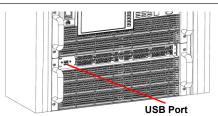
The removable cover is removed accordingly.



4. Pull out the plastic frame from ASR Slave unit.



5. The plastic frame was removed and thus the USB A-type port of Slave unit appears.

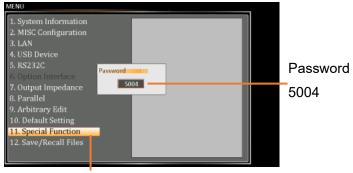


- Repeat the previous step 1 to step 5 for each connected ASR Slave unit.
- 7. Insert USB flash drives into the USB A-type ports on front panel of both Master and Slave units. The USB drives should include the texio_sb6.upg file in a directory name"TEXIO".
- Press the Menu key on the Master unit. and the Menu setting will appear on the display of Master unit

Menu

Use the scroll wheel to go to item 11, Special Function and press Enter.





- 11. Special Function
- 10. Key in the password when prompted and then press Enter.
 The password is "5004".
- 11. Go to Item 1, Update Firmware and press Enter.
 - 1. Update Firmware



12. Wait for the units to update. Upon completion the units will automatically reboot.

Note

If the following case occurs during update process as the diagram below, it indicates failure of update and please thus contact TEXIO or your local dealer.



3-2. Function Difference Table

A Comparison between Stand Alone Type and RK Type

The dif	The difference functions								
	Model	ASR452-351 ASR602-351	ASR902-351RK ASR123-351RK ASR133-351RK ASR183-351RK	ASR243-351RK ASR303-351RK ASR363-351RK					
1	V Response	Fast, Medium(default), Slow	Medium(default), Slow	Slow					
2	Output Impedance Setting	0	X	X					
3	External Parallel Operation	2~6 units flexible	Fixed	Fixed					

3-3. Factory Default Settings

The following default settings are the factory configuration settings for the ASR-RK series. For details on how to return to the factory default settings, refer to the User Manual of ASR-4.5k / 6k.

Continuous	ASR902- ASR123-		ASR	133-	ASR	183-	ASR	243-	ASR303-		ASR363-			
Mode	351	RK	351	RK	351RK 351RK		351RK		351RK		351RK			
	3P	1P	3P	1P	3P	1P	3P	1P	3P	1P	3P	1P	3P	1P
	4W	2W	4W	2W	4W	2W	4W	2W	4W	2W	4W	2W	4W	2W
MODE						AC-	+DC-I	NT M	ode					
Range							10	0V						
ACV							0.00	Vrms						
DCV							+0.00) Vdc						
FREQ							50.0	0 Hz						
IRMS	30.00A	90.00A	40.00A	120.0A	45.00A	135.0A	60.00A	180.0A	80.00A	240.0A	100.0A	300.0A	120.0A	360.0A
ON Phs	Fixed 0.0°													
OFF Phs							Fixed	°0.0 t						

Gain		100												
SIG		L1 LINE												
SRC							L1 I	EXT						
Wave							S	IN						
Syc Phs							()						
Freq Limit							200	0 Hz						
Vrms Limit		175.0 Vrms												
VPK+ Limit		+ 250 V												
VPK- Limit							- 25	50 V						
IPK+ Limit	+120.0 A	+360.0 A	+160.0 A	+480.0 A	+180.0 A	+540.0 A	+240.0 A	+720.0 A	+320.0 A	+960.0 A	+400.0 A	+1200.0 A	+480.0 A	+1440.0 A
IPK- Limit	-120.0 A	-360.0 A	-160.0 A	-480.0 A	-180.0 A	-540.0 A	-240.0 A	-720.0 A	-320.0 A	-960.0 A	-400.0 A	-1200.0 A	-480.0 A	-1440.0 A

MISC	ASR902	ASR123	ASR133	ASR183	ASR243	ASR303	ASR363
Configuration	-351RK	-351RK	-351RK	-351RK	-351RK	-351RK	-351RK
T peak,				1			
hold(msec)				ı			
Phase Mode				Unbalance			
Peak CLR				ALL			
Power ON				OFF			
Buzzer				ON			
Remote				OFF			
Sense				OFF			
V Response		Med	dium			Slow	
Output Relay				Enable			
Measure Unit				RMS			
THD Format				IEC			
External				OFF			
Control I/O				OFF			
V Unit				rmo			
(TRI, ARB)				rms			

Set Change	OFF
Phase	OFF
Monitor	L1 Voltage
Output1	Li voltage
Monitor	L1 Current
Output2	ET Guiterit
Monitor	±2.5
Output Amp	IZ.J
TrgOut Width	0.1
(ms)	0.1
TrgOut	L1
Source	LI
Re-Lock	ON
Data	
Average	8
Count	
Data Update	Fast
Rate	rasi

LAN	ASR-RK
DHCP	ON

USB Device	ASR-RK
Speed	Full
Mode	TMC

RS-232C	ASR-RK
Baudrate	9600
Databits	8bits
Parity	None
Stopbits	1bit

GP-IB	ASR-RK
Address	10

Sequence	ACD DV
Mode	ASR-RK
Step	0
Time	0.1000 S
Jump to	OFF
Jump Cnt	1
Branch1	OFF
Branch2	OFF
Term	CONTI
Sync Code	LL
Item	L1 L2 L3
ACV	0.00,CT 0.00,CT 0.00,CT
DCV	0.00,CT 0.00,CT 0.00,CT
Fset	50.0,CT 50.0,CT 50.0,CT
Wave	SIN
Trig Out	LO
ON Phs	Free
OFF Phs	Free
Phase	Fixed(0) 120 240

Simuration	ASR-RK
Mode	ASK-KK
Step	Initial
Repeat	OFF
Time	0.1000 S
Term	Free
Code	LL
Item	L1 L2 L3
ACV	0.00
Fset	50.00
Wave	SIN
ON Phs	Free
OFF Phs	Free

3-4. Error Messages & Messages

The following error messages or messages may appear on the ASR-RK screen display during varied operations.

Normal Messages	Description	Protection type
Keys Locked	All of keys are locked, except output key, long push "Lock" to disable Keys Locked	Display Message Only
Keys Unlocked	All of keys are unlocked	Display Message Only
Invalid with Remote Control	All of keys are locked, except Output and Shift and Local Key, press "Shift + 0" to disable Remote Control	Display Message Only
Invalid with Remote Lock Control	All of keys including Output and Local Keys are locked.	Display Message Only
Invalid in This Meter Frozen	Invalid Operation In This Meter Frozen, press "F8" to disable Meter Frozen	Display Message Only
Invalid in This Page	Invalid Operation In This Page. Valid main and simple page for preset mode.	Display Message Only
Recalled From M#	Recalled Preset From M0 ~ M9	Display Message Only
Saved To M#	Saved Preset To M0 ~ M9	Display Message Only
Setting Voltage Limited	Setting voltage be limited, press "shift + V" to check allowance set range	Display Message Only
Setting Frequency Limited	Setting frequency be limited, press "shift + F" to check allowance set range	Display Message Only
Setting Phase Limited	Setting ON/OFF Phase Limited	Display Message Only
Setting Duty Limited	Setting Duty be limited	Display Message Only
Invalid with Output ON	Invalid with Output ON	Display Message Only
Rear USB Port Connected To PC	Rear USB port connected to PC	Display Message Only
Rear USB Port Disconnected From PC	Rear USB port disconnected from PC	Display Message Only
Reseting	Ready For Recall Factory Default	Display Message Only
Failed Factory Default	Recall Factory Default Failed	Display Message Only
Error Password	Input Error Password	Display Message Only
USB Memory Unconnected	Could not detect USB memory, please connect a USB memory.	Display Message Only
No File ([Filename]) in [directory]	Not find specific file in USB specific directory	Display Message Only
Saved to DEF1	Saved Setting to DEF1	Display Message Only
Saved to DEF2	Saved Setting to DEF2	Display Message Only

Preset Mode	Operation at preset mode	Display Message Only
Exit Preset Mode	Exit preset mode	Display Message Only
Meter Frozen	Operation at Meter Frozen mode, all measure value will stop update.	Display Message Only
Only AC-INT and 50 / 60Hz Active	Harmonic Page Limit Message	Display Message Only
Configure Phase Toggle,Please wait	Configure Phase Toggle	Display Message Only
[Filename] Saved Success	Save file to USB success message. [Filename] ex Preset0.Set or SEQ0.SEQ or SIM0.SIM or ARB1.ARB	Display Message Only
[Filename] Saved Fail	Save file to USB fail message	Display Message Only
[Filename] Recalled Success	Recalled file success message	Display Message Only
[Filename] Recall Fail(No File in [directory])	Recall file fail message(not find specific file in USB specific directory)	Display Message Only
[Filename] Recall Fail(File Format Error)	Recall file fail message(file format error)	Display Message Only
[Filename] Recall Fail(File Data Error)	Recall file fail message(file Data error(Data out of Range))	Display Message Only
Preset M# Deleted	Preset M0~M9 Deleted	Display Message Only
ARB# Deleted	ARB1~ARB253 Deleted	Display Message Only
Save All Data	Ready to save all data (Preset0~9 + SEQ0~9 + SIM0~9 + ARB1~253)	Display Message Only
All Data Saved Success	All data are saved successfully (Preset0~9 + SEQ0~9 + SIM0~9 + ARB1~253)	Display Message Only
Recall All Data	Ready to recall all data (Preset0~9 + SEQ0~9 + SIM0~9 + ARB1~253)	Display Message Only
All Data Recall Success	All data are recalled successfully (Preset0~9 + SEQ0~9 + SIM0~9 + ARB1~253)	Display Message Only
Delete All Data	Ready to delete all data (Preset0~9 + SEQ0~9 + SIM0~9 + ARB1~253)	Display Message Only
All Data Deleted	All data are deleted successfully (Preset0~9 + SEQ0~9 + SIM0~9 + ARB1~253)	Display Message Only
USB Memory Connected	Detect USB Memory connected	Display Message Only
USB Memory Access Error	Please check a FAT32-formatted USB memory, and Reinsert USB memory	Display Message Only
USB File Write Error!	Can not Save File to USB	Display Message Only
Screen Saved to USB:/GWDIMC###.	Screenshot be saved to USB memory successful	Display Message Only
Hardcopy Fail!(Too Many Files in USB)	Hardcopy Fail !, Over 1000 files in USB	Display Message Only

Valid Only AC-INT,	Remote Sense Setting Limit Message	Display
DC-INT and AC-	remote conse county Limit Wessage	Message Only
Sync Mode		,
Valid Only 100V and		Display
200V Range		Message Only
Valid Only SIN		Display
Wave Shape		Message Only
Saved To ARB#	Saved to ARB1 ~ ARB253	Display
		Message Only
Saved To ARB#,V-	Saved to ARB1 ~ ARB253,V-Limit Invalid	Display
Limit Invalid	,	Message Only
Saved To ARB#,V-	Saved to ARB1 ~ ARB253,V-Limit and Freq	Display
Limit & Freq Invalid	Invalid	Message Only
Saved To ARB Fail	Failed to save ARB file, please check whether	Display
	the file is correct	Message Only
Invalid in This	This mode not support SEQ or SIM Valid Only	Display
Output Mode	AC+DC-INT, AC-INT and DC-INT Mode for	Message Only
,	SEQ Valid Only AC+DC-INT Mode for SIM	o ,
Invalid For Auto	Auto range not allow SEQ / SIM, change the	Display
Range	output range	Message Only
Invalid with Output	The output offstate does not allow the	Display
OFF, Turn ON the	execution, turn on the output first	Message Only
Output First	•	,
Invalid with Output	The output onstate does not allow the	Display
ON, Turn OFF the	execution, turn off the output first	Message Only
Output First	·	
Invalid in This	Invalid Operation In This Sequence	Display
Sequence		Message Only
Invalid in This	Invalid Operation In This Simulate	Display
Simulate		Message Only
SEQ#Deleted	SEQ0~SEQ9 Deleted	Display
		Message Only
SIM#Deleted	SIM0~SIM9 Deleted	Display
-01 1050#	01 10500 0500	Message Only
Cleared SEQ#	Cleared SEQ0~SEQ9	Display
01 1011111	01 101140 01140	Message Only
Cleared SIM#	Cleared SIM0~SIM9	Display
- II I (B # 16 0500 0500	Message Only
Recalled from	Recalled fromSEQ0 ~ SEQ9	Display
SEQ#	D (O O O O O O	Message Only
Recalled from SIM#	Recalled fromSIM0 ~ SIM9	Display
D "F "/D "	0500 0500 0100 01000 115 111	Message Only
Recall Fail!/Recall	SEQ0 ~ SEQ9or SIM0 ~ SIM9Recall Fail!	Display
Data Fail!	Cayad taCEOO - CEOO	Message Only
Saved to SEQ#	Saved toSEQ0 ~ SEQ9	Display
Saved to SIM#	Saved toSIM0 ~ SIM9	Message Only
Saveu to SIIVI#	Saveu (USIIVIU ~ SIIVIS	Display
Save Fail!	SEQ0 ~ SEQ9 or SIM0 ~ SIM9 save fail!	Message Only
Save Fall!	SERO ~ SERA OI SIINIO ~ SIINIA SAVE ISIII;	Display
Soguence	Seguence proparation, places weit some time	Message Only Display
Sequence preparation	Sequence preparation, please wait some time	Message Only
Sequence is ready.	Sequence is ready.	Display
ocquerice is ready.	Coquente to roudy.	Display

	Message Only
Simulation preparation, please wait some time	Display
	Message Only
Simulation is ready.	Display
	Message Only
Alarm Clear Please Wait	Display
	Message Only
Master or slave waits for parallel connection	Display
	Message Only
Output Impedance Valid Only Standalone	Display
	Message Only
CANopen Duplicate Node ID	Display
	Message Only
DeviceNet Duplicate Node ID	Display
	Message Only
Parallel Communication Error (0~9)	Display
,	Message Only
	Simulation is ready. Alarm Clear Please Wait Master or slave waits for parallel connection Output Impedance Valid Only Standalone CANopen Duplicate Node ID DeviceNet Duplicate Node ID

3-5. Specifications

The specifications apply when the ASR-RK is powered on for at least 30 minutes.

- A value with the accuracy is the guaranteed value of the specification. However, an
 accuracy noted as reference value shows the supplemental data for reference when
 the product is used, and is not under the guarantee. A value without the accuracy is
 the nominal value or representative value (shown as typ.).
- Product specifications are subject to change without notice.

3-5-1. Electrical specifications ASR902-351RK / ASR123-351RK

Model Input ratings	ASR902-351Rk		ASR123-351RK		
Power type	Three-phase, D	elta or Y connect	ion		
Voltage range*1	Three-phase, D	elta:200V~240\	/±10% or		
voltage range	Three-phase, Y	connection: 380\	√~460V±10%	Factory specified	
Frequency range	47Hz to 63Hz				
Power factor*2	0.95 or higher (t	typ.)			
Efficiency*2	80 % or higher				
Maximum power consumption	12kVA or lower		16kVA or lower		
Model AC output	ASR902-351RK		ASR123-351RK		
Multi-phase output	Single-phase output	Polyphase output	Single-phase output	Polyphase output	
Output capacity	9kVA 1P3W: 6kVA 3P4W: 9kVA		12kVA	1P3W: 8kVA 3P4W: 12kVA	
Mode	1P2W	1P3W	1P2W	1P3W	

			00 414/ ()/		0004141/11/			
			3P4W (Y-		3P4W (Y-			
			connection)		connection)			
Setting mode*3			Unbalance,		Unbalance,			
		0.00\/+- 475.0\/	Balance	/ / - !	Balance			
Disease	0 - 44'		0.00V to 175.0V / 0.0V to 350.0V (sine and square wave), Setting					
Phase	Setting	Resolution: 0.01		40001/ //:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
voltag	Range*4			o 1000Vpp (triang				
е	^ *5			pp / 0.1Vpp / 1Vp	p			
	Accuracy*5	±(0.3% of set + 0			40014 0 0014			
			1P3W: 0.00V		1P3W: 0.00V			
			to 350.0V /		to 350.0V /			
			0.00V to		0.00V to			
			700.0V 3P4W: 0.00V		700.0V 3P4W: 0.00V			
			to 303.1V /		to 303.1V /			
Line vo	Itage setting		0.00V to		0.00V to			
range*6			606.2V		606.2V			
			(sine wave		(sine wave			
			only)		only)			
			Setting		Setting			
			Resolution:		Resolution:			
			0.01V / 0.1V		0.01V / 0.1V			
Maximu	ım current*7	90A / 45A	30A / 15A	120A / 60A	40A / 20A			
Maximu					40/1/20/1			
current*8		Four times of the	e maximum RMS	current				
Load po	ower factor*9	0 to 1 (leading p	hase or lagging p	hase, 45Hz to 65	Hz)			
	Setting			Hz, AC+DC Mo				
Гиолилопо	range	1000.0Hz, Setting resolution: 0.01Hz / 0.1Hz						
Frequency Accuracy		. 0.040/ 5 4						
	Accuracy	± 0.01% of set						
	Stability*10	± 0.005%						
	Stability*10 on phase	± 0.005%	ariable (Free / Fix	selectable), 0.1°	(1Hz to 500Hz),			
setting r	Stability*10 on phase range*11	± 0.005% 0.0° to 359.9° va 1° (500Hz to 100	00Hz)		·			
setting r	Stability*10 on phase range*11 off phase	± 0.005% 0.0° to 359.9° va 1° (500Hz to 100 0.0° to 359.9° va	00Hz) ariable (Free / Fix	selectable), 0.1° selectable), 0.1°	·			
setting r	Stability*10 on phase range*11 off phase	± 0.005% 0.0° to 359.9° va 1° (500Hz to 100	00Hz) ariable (Free / Fix 00Hz)		(1Hz to 500Hz),			
setting r	Stability*10 on phase range*11 off phase	± 0.005% 0.0° to 359.9° va 1° (500Hz to 100 0.0° to 359.9° va	00Hz) hriable (Free / Fix 00Hz) 3P4W:		(1Hz to 500Hz), 3P4W:			
setting r	Stability*10 on phase range*11 off phase	± 0.005% 0.0° to 359.9° va 1° (500Hz to 100 0.0° to 359.9° va	00Hz) hriable (Free / Fix 00Hz) 3P4W: L2 phase: 0°		(1Hz to 500Hz), 3P4W: L2 phase: 0°			
setting r Output setting r	Stability*10 on phase range*11 off phase range*11	± 0.005% 0.0° to 359.9° va 1° (500Hz to 100 0.0° to 359.9° va	OOHz) Ariable (Free / Fix OOHz) 3P4W: L2 phase: 0° to 359.9°		(1Hz to 500Hz), 3P4W: L2 phase: 0° to 359.9°			
Setting r	Stability*10 on phase range*11 off phase range*11	± 0.005% 0.0° to 359.9° va 1° (500Hz to 100 0.0° to 359.9° va	OOHz) Ariable (Free / Fix OOHz) 3P4W: L2 phase: 0° to 359.9° L3 phase: 0°		(1Hz to 500Hz), 3P4W: L2 phase: 0° to 359.9° L3 phase: 0°			
setting r Output setting r	Stability*10 on phase range*11 off phase range*11	± 0.005% 0.0° to 359.9° va 1° (500Hz to 100 0.0° to 359.9° va	00Hz) ariable (Free / Fix 00Hz) 3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9°		(1Hz to 500Hz), 3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9°			
Setting r	Stability*10 on phase range*11 off phase range*11	± 0.005% 0.0° to 359.9° va 1° (500Hz to 100 0.0° to 359.9° va	ontz) Ariable (Free / Fix 20Hz) 3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting		(1Hz to 500Hz), 3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting			
Setting r	Stability*10 on phase range*11 off phase range*11	± 0.005% 0.0° to 359.9° va 1° (500Hz to 100 0.0° to 359.9° va	OOHz) Ariable (Free / Fix OOHz) 3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution:		(1Hz to 500Hz), 3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution:			
Setting r	Stability*10 on phase range*11 off phase range*11	± 0.005% 0.0° to 359.9° va 1° (500Hz to 100 0.0° to 359.9° va	OOHz) Ariable (Free / Fix OOHz) 3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1°		(1Hz to 500Hz), 3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1°			
Setting reserved in Setting reserved in Setting phase as	Stability*10 on phase range*11 off phase range*11 range of the angle*12	± 0.005% 0.0° to 359.9° va 1° (500Hz to 100 0.0° to 359.9° va	ontz) ariable (Free / Fix ontz) 3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1° 45Hz to 65Hz:		(1Hz to 500Hz), 3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1° 45Hz to 65Hz:			
Setting r Setting phase a	Stability*10 on phase range*11 off phase range*11 range of the angle*12	± 0.005% 0.0° to 359.9° va 1° (500Hz to 100 0.0° to 359.9° va	ontz) ariable (Free / Fix ontz) 3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1° 45Hz to 65Hz: ±1.0°		3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1° 45Hz to 65Hz: ±1.0°			
Setting reserved in Setting reserved in Setting phase as	Stability*10 on phase range*11 off phase range*11 range of the angle*12	± 0.005% 0.0° to 359.9° va 1° (500Hz to 100 0.0° to 359.9° va	ontz) ariable (Free / Fix ontz) 3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1° 45Hz to 65Hz: ±1.0° 15Hz to		3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1° 45Hz to 65Hz: ±1.0° 15Hz to			
Setting r Setting phase a	Stability*10 on phase range*11 off phase range of the angle*12 angle cy*13	± 0.005% 0.0° to 359.9° va 1° (500Hz to 100 0.0° to 359.9° va 1° (500Hz to 100	ontz) ariable (Free / Fix ontz) 3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1° 45Hz to 65Hz: ±1.0°		3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1° 45Hz to 65Hz: ±1.0°			
Setting r Setting r Setting phase a accurace	Stability*10 on phase range*11 off phase range of the angle*12 angle cy*13	± 0.005% 0.0° to 359.9° va 1° (500Hz to 100 0.0° to 359.9° va 1° (500Hz to 100 ± 20mV (typ.)	OOHz) Ariable (Free / Fix OOHz) 3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1° 45Hz to 65Hz: ±1.0° 15Hz to 1000Hz: ±2.0°	selectable), 0.1°	(1Hz to 500Hz), 3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1° 45Hz to 65Hz: ±1.0° 15Hz to 1000Hz: ±2.0°			
Setting r Setting r Setting phase a Curac DC offse	Stability*10 on phase range*11 off phase range of the angle*12 angle ey*13	± 0.005% 0.0° to 359.9° va 1° (500Hz to 100 0.0° to 359.9° va 1° (500Hz to 100 ± 20mV (typ.) ASR902-351RK	OOHz) Ariable (Free / Fix OOHz) 3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1° 45Hz to 65Hz: ±1.0° 15Hz to 1000Hz: ±2.0°		(1Hz to 500Hz), 3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1° 45Hz to 65Hz: ±1.0° 15Hz to 1000Hz: ±2.0°			
Setting r Setting r Setting r Setting r Phase a accurace DC offset Model DC outp	Stability*10 on phase range*11 off phase range of the angle*12 angle cy*13 et*14 out (only single	± 0.005% 0.0° to 359.9° va 1° (500Hz to 100 0.0° to 359.9° va 1° (500Hz to 100 ± 20mV (typ.) ASR902-351RK e-phase output)	OOHz) Ariable (Free / Fix OOHz) 3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1° 45Hz to 65Hz: ±1.0° 15Hz to 1000Hz: ±2.0°	selectable), 0.1° ASR123-351RK	(1Hz to 500Hz), 3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1° 45Hz to 65Hz: ±1.0° 15Hz to 1000Hz: ±2.0°			
Setting r Setting r Setting r Setting r Phase a accurace DC offset Model DC outp	Stability*10 on phase range*11 off phase range of the angle*12 angle ey*13	± 0.005% 0.0° to 359.9° va 1° (500Hz to 100 0.0° to 359.9° va 1° (500Hz to 100 ± 20mV (typ.) ASR902-351RK e-phase output) 9kW	OOHz) Ariable (Free / Fix OOHz) 3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1° 45Hz to 65Hz: ±1.0° 15Hz to 1000Hz: ±2.0°	selectable), 0.1° ASR123-351RK 12kW	(1Hz to 500Hz), 3P4W: L2 phase: 0° to 359.9° L3 phase: 0° to 359.9° Setting Resolution: 0.1° 45Hz to 65Hz: ±1.0° 15Hz to 1000Hz: ±2.0°			

	Setting	-250.0V to +250.0V / -500.0V to +500.0V, Setting Resolution:				
Voltage	Range	0.01V / 0.1V				
	Accuracy*15	± (0.3% of set + 0.3V / 0.6V)				
Maximu	ım current*16	90A / 45A 120A / 60A				
Maximul current*1		Four times of the maximum current				
Output :	Stability, Total	Harmonic Distortion, Output voltage rising time and Ripple noise				
Line reg		±0.1% or less (Phase voltage)				
Load re	gulation* ¹⁸	±0.5V / ±1.0V (phase voltage, 0 to 100%, via output terminal)				
Distantia	.	<0.3%@1Hz~100Hz,				
Distortion of		<0.5%@100.1Hz~500Hz,				
Output*		<1%@500.1Hz~1000Hz				
Output	voltage	Middle: 100µs(typ.)				
	se time*20	Slow: 300µs(typ.)				
Ripple r	noise ^{*21}	0.5Vrms / 1Vrms(typ.)				

Measured va		surement funct	ion is indicated for 23 °C±	5 °C)
(7 iii doodido)	<i>y</i>		Single-phase output	Polyphase output*27
	Resolution		0.01V / 0.1V	71 1
Voltage*22*2	RMS value accuracy		45Hz to 65Hz and DC: ± (0.5% of rdg + 0.5V / 1V) 15Hz to 1000Hz: ±	45Hz to 65Hz: ± (0.5 % of rdg + 0.5V / 1V) 15Hz to 1000Hz: ±
3			(0.7% of rdg + 1V / 2V)	(0.7% of rdg + 1V / 2V)
	AVG value	accuracy	DC: ± (0.5% of rdg + 0.5V / 1V)	DC: ± (0.5% of rdg + 0.5V / 1V)
	PEAK value accuracy*24		45Hz to 65Hz and DC: ± (2% of rdg + 1V / 2V)	45Hz to 65Hz: ± (2% of rdg + 1V / 2V)
	Resolution		0.01A / 0.1A	
Current* ²⁵	RMS value accuracy		45Hz to 65Hz and DC: ± (0.5% of rdg + 0.2A / 0.1A) 15Hz to 1000Hz: ± (0.7% of rdg + 0.4A / 0.2A)	45Hz to 65Hz: ± (0.5% of rdg + 0.1A / 0.05A) 15Hz to 1000Hz: ± (0.7% of rdg + 0.2A / 0.1A)
	AVG value accuracy		DC: ± (0.5% of rdg + 0.4A / 0.2A)	DC: ± (0.5% of rdg + 0.2A / 0.1A)
	PEAK value accuracy*26		45Hz to 65Hz and DC: ± (2% of rdg + 2A / 1A)	45Hz to 65Hz: ± (2% of rdg + 1A / 0.5A)
	Active	Resolution	0.1W / 1W / 10W	
	(W)	Accuracy*30	±(2% of rdg+6W)	±(2% of rdg+2W)
Power*28*29	Apparent	Resolution	0.1VA / 1VA / 10VA	
	(VA)	Accuracy	±(2% of rdg+9VA)	±(2% of rdg+3VA)
	Reactive	Resolution	0.1VAR / 1VAR / 10VAR	
	(VAR)	Accuracy*31	±(2% of rdg+9VAR)	±(2% of rdg+3VAR)
Power	Range		0.000~1.000	
factor	Resolution		0.001	

Harmonic	Range			Up to 100th order of the fundamental wave		
voltage	Full So			200V / 400V, 100%		
Effective	Resolu	ution	0.01V	/ 0.1V, 0.1%		
value (rms) Percent (%) (AC-INT Accura		acy ^{*33}		20th: ± (0.2% of ro o 100th: ± (0.3% c	dg + 0.5V / 1V) of rdg + 0.5V / 1V)	
and 50 / 60 Hz only) *32						
Harmonic	Range	<u> </u>	Un to	100th order of the	fundamental wave	
current	Full So			63A, 100%	126A / 63A, 100%	
Effective	Resolu			./ 0.1 A, 0.1%	·	
value (rms) Percent			Up to :	20th: ± (1% of	Up to 20th: ± (1% of	
(%)	Accura	ov*34	•	3A / 1.5À)	rdg + 1A / 0.5A)	
(AC-INT	Accura	icy -		o 100th: ± (1.5%	21th to 100th: ± (1.5%	
and 50 / 60 Hz only) *32			of rdg	+ 3A / 1.5A)	of rdg + 1A / 0.5A)	
Others		UVP. OVP. O	CP. OTP. O	PP. Fan Fail. Pea	k and RMS Current	
Protections		Limit	o., o, o	,	K dira r kino Garrom	
Parallel		Not supported				
Display		TFT-LCD, 7 in				
Memory fund	ction		all settings,	, Basic settings: 1	0	
		Number of memories	253 (no	onvolatile)		
Arbitrary Wa	ive	Waveform length	4096 w	ords		
		Amplitude resolution	16 bits			
3-5-2. Gene	ral Spe	ecifications AS	R902-351	RK / ASR123-3	51RK	
Model				ASR902-351RK	ASR123-351RK	
			USB	Type A: Host, Ty 2.0, USB-CDC /	vpe B: Slave, Speed: USB-TMC	
		Standard -	LAN	MAC Address, D Password, Gate Instrument IP Ad	DNS IP Address, User way IP Address, ddress, Subnet Mask	
Interface		Claridard	External	External Signal External Control V/I Monitor Outp	I/O	
			RS-	Complies with th	ne EIA-RS-232	
			232C	specifications	E 488.2 compliant	
		Optional 1	GPIB	interface	E 400.2 compilant	
Insulation resistance		Between input chassis, output chassis, input a	and	DC 500V, 30MΩ	or more	
Withstand vo	oltage	Between input chassis, output chassis, input a	and	AC 1500V or DC	2130V, 1 minute	
		• •	<u> </u>			

EN 61326-1 (Class A)					
	EN 61326-2-1/-2-2 (Class A)				
EN 61000-3-2 (Class A, Group 1					
EMC EN 61000-3-3 (Class A, Group 1					
EN 61000-4-2/-4-3/-4-4/-4-5/-4-6	3/-4-8/-				
4-11 (Class A, Group 1)					
EN 55011 (Class A, Group1)					
Safety EN 61010-1					
Operating environment Indoor use, Overvoltage Catego	ry II				
Operating 0°C to 40°C					
temperature range					
Storage temperature -10°C to 70°C					
Environment range					
Operating humidity 20%rh to 80% RH (no condense	ation)				
range					
Storage humidity 90% RH or less (no condensation	n)				
range					
Altitude Up to 2000m					
Dimensions (mm) (not including protrusions) 598(W)×937(H)×906(D)					
Weight Approx. 155kg					
3-5-3. Electrical specifications ASR133-351RK / ASR183-351RK					
Model ASR133-351RK ASR183-351RK					
Input ratings					
Power type Three-phase, Delta or Y connection					
Three-phase Delta 200V~240V+10% or	Three-phase, Delta: 200V~240V±10% or				
Voltage range '	Three-phase, Y connection: 380V~460V±10% Factory specified				
	Jecinea				
Frequency range 47Hz to 63Hz Power factor*2 0.95 or higher (typ.)					
Efficiency* ² 80% or higher					
Maximum power					
consumption 18kVA or lower 24kVA or lower					
Consumption					
Model ASR133-351RK ASR183-351RK					
AC output					
Multi-phase output Single-phase Polyphase Polyphase Single-phase S	nase				
output output output output	•				
Output capacity 13.5kVA 1P3W: 9kVA 18kVA 1P3W:	12kVA				
Output capacity 13.5kVA 3P4W: 13.5kVA 18kVA 3P4W:	18kVA				
1P3W 1P3W					
Mode 1P2W 3P4W (Y- 1P2W 3P4W	(Y-				
connection) conne	ction)				
Setting mode*3 Unbalance, Unbal	ance,				
Setting mode*3 Balanced Balance	ced				
0.00V to 175.0V / 0.0V to 350.0V (sine and square wave),				
Phase Setting Setting Resolution: 0.01V / 0.1V					
	0.00Vpp to 500.0Vpp / 0.00Vpp to 1000Vpp (triangle and arbitrary				
voltag Range*4 0.00Vpp to 500.0Vpp / 0.00Vpp to 1000Vpp (triangle and	arbitiary				
voltag e 0.00Vpp to 500.0Vpp / 0.00Vpp to 1000Vpp (triangle and wave), Setting Resolution: 0.01Vpp / 0.1Vpp / 1Vpp Accuracy*5 ±(0.3% of set + 0.5V / 1V)					

		1P3W: 0.00V to 350.0V /		1P3W: 0.00V to 350.0V /
		0.00V to		0.00V to
		700.0V		700.0V
		3P4W: 0.00V		3P4W: 0.00V
Line voltage setting		to 303.1V /		to 303.1V /
range ^{*6}		0.00V to		0.00V to
J		606.2V		606.2V
		(sine wave only)		(sine wave only)
		Setting		Setting
		Resolution:		Resolution:
		0.01V / 0.1V		0.01V / 0.1V
Maximum current*7	135A / 67.5A	45A / 22.5A	180A / 90A	60A / 30A
Maximum peak				
current*8 Load power factor*9		he maximum RM		SELL=\
			phase, 45Hz to 6 , AC+DC Mode:	
Setting Frequency range		ting resolution: 0.	·	1.0002 10
Frequency range Accuracy			0102/0.102	
Stability*1				
Output on phase		variable (Free / F	ix selectable), 0.1	° (1Hz to
setting range*11		0Hz to 1000Hz)	ix scicolabic), o. i	(1112.10
Output off phase			ix selectable), 0.1	° (1Hz to
setting range*11		0Hz to 1000Hz)	co.co.ab.o/, c	(11.12.10
	(00	3P4W:		3P4W:
		L2 phase: 0°		L2 phase: 0°
		to 359.9°		to 359.9°
Setting range of the		L3 phase: 0°		L3 phase: 0°
phase angle ^{*12}		to 359.9°		to 359.9°
		Setting		Setting
		Resolution:		Resolution:
		0.1°		0.1°
D		45Hz to 65Hz:		45Hz to 65Hz:
Phase angle		±1.0°		±1.0°
accuracy*13		15Hz to		15Hz to
DC offset*14	+ 20m\/ (tun)	1000Hz: ±2.0°		1000Hz: ±2.0°
DC oliset	± 20mV (typ.)			
Model	ASR133-351RK		ASR183-351RK	•
DC output (only sing				
Output capacity	13.5kW		18kW	
Mode		the N terminal ca		
Setting Voltage Range	-250.0V to +250 0.01V / 0.1V	.0V / -500.0V to -	+500.0V, Setting F	Resolution:
Accuracy*15	± (0.3% of set -	+ 0.3V / 0.6V)		
Maximum current*16	135A / 67.5A		180A / 90A	
Maximum peak	Four times of the	e maximum curre	nt	
current*17	i our unies or the	= maximum cure	111	
Output Stability, Tota	l Harmonic Distorti	on. Output voltac	e rising time and	Ripple noise
Line regulation	±0.1% or less (F		,	
Load regulation*18			o 100%, via outpu	ut terminal)
	· - · · · · (P		,	,

Load regulation*19		<0.3%@1Hz~10<0.5%@100.1Hz<1%@500.1Hz	z~500Hz,		
Output voltag	_		us(typ.) us(typ.)		
Ripple noise).5Vrms / 1Vrms			
Tuppic Hoise		7.0 11113 / 1 111113	(цур.)		
Measured va (All accuracy			ion is indicated for 23 °C±		
			Single-phase output	Polyphase output*27	
	Resolution	า	0.01V / 0.1V		
Voltage*22*2	RMS valu	e accuracy	45Hz to 65Hz and DC: ± (0.5% of rdg + 0.5V / 1V) 15Hz to 1000Hz: ± (0.7% of rdg + 1V / 2V)	45Hz to 65Hz: ± (0.5% of rdg + 0.5V / 1V) 15Hz to 1000Hz: ± (0.7% of rdg + 1V / 2V)	
	AVG value	e accuracy	DC: ± (0.5 % of rdg + 0.5V / 1V)	DC: ± (0.5% of rdg + 0.5V / 1V)	
	PEAK val	ue accuracy*24	45Hz to 65Hz and DC: ± (2% of rdg + 1V / 2V)	45Hz to 65Hz: ± (2% of rdg + 1V / 2V)	
	Resolution	า	0.01A / 0.1A		
Current* ²⁵	RMS value accuracy		45Hz to 65Hz and DC: ± (0.5% of rdg + 0.3A / 0.15A) 15Hz to 1000Hz: ± (0.7% of rdg + 0.6A / 0.4A)	45Hz to 65Hz: ± (0.5% of rdg + 0.15A / 0.08A) 15Hz to 1000Hz: ± (0.7% of rdg + 0.3A / 0.15A)	
	AVG value accuracy		DC: ± (0.5% of rdg + 0.6A / 0.4A)	DC: ± (0.5% of rdg + 0.3A / 0.15A)	
	PEAK val	ue accuracy ^{*26}	45Hz to 65Hz and DC: ± (2% of rdg + 3A / 1.5A)	45Hz to 65Hz: ± (2% of rdg + 1.5A / 0.75A)	
	Active	Resolution	0.1W / 1W / 10W		
	(W)	Accuracy*30	±(2% of rdg+6W)	±(2% of rdg+2W)	
Power*28*29	Apparent	Resolution	0.1VA / 1VA / 10VA		
	_(VA)	Accuracy	±(2% of rdg+9VA)	±(2% of rdg+3VA)	
	Reactive	Resolution	0.1VAR / 1VAR / 10VAF		
	(VAR)	Accuracy*31	±(2% of rdg+9VAR)	±(2% of rdg+3VAR)	
Power	Range		0.000~1.000		
factor	Resolution	<u>1</u>	0.001	f da	
Harmonic	Range		Up to 100th order of the fundamental wave		
voltage Effective	Full Scale		200V / 400V, 100%		
value (rms)	Resolution	1	0.01V / 0.1V, 0.1%		
Percent (%) (AC-INT and 50 / 60 Hz only) *32	Accuracy* ³³		Up to 20th: ± (0.2% of roughly 21th to 100th: ± (0.3% of	of rdg + 0.5V / 1V)	
Harmonic	Range		Up to 100th order of the		
current	Full Scale		189A / 94.5A, 100%	63A / 31.5A, 100%	

Effective	Resolution		0.01A	1A / 0.1A, 0.1%		
value (rms) Percent (%) (AC-INT and 50 / 60 Hz only) *32	Accuracy*34		rdg + 3 21th to	Up to 20th: \pm (1% of rdg + 3A / 1.5A)		
Others						
Protections		UVP, OVP, OO Limit	CP, OTP, O	PP, Fan Fail, Pea	k and RMS Current	
Parallel		Not supported				
Display		TFT-LCD, 7 ir		D : 11: 4:	^	
Memory fund	ction	Number of	ali settings,	Basic settings: 1	U	
		memories	253 (no	nvolatile)		
Arbitrary Wa	ve	Waveform length	4096 w	ords		
		Amplitude resolution	16 bits			
3-5-4. Gene	ral Spe		R133-351	RK / ASR183-3	51RK	
Model				ASR133-351RK		
		Standard -	USB	Type A: Host, Type B: Slave, Speed: 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 I External Control V/I Monitor Outp	I/O	
			RS- 232C	Complies with the EIA-RS-232 specifications		
		Optional 1	GPIB		E 488.2 compliant	
Insulation resistance		Between input and chassis, output and chassis, input and output		DC 500V, 30MΩ	or more	
Withstand vo	oltage	Between input and chassis, output and chassis, input and output		AC 1500V or DC	2130V, 1 minute	
EMC				EN 61000-3-3 (C	2-2 (Class A) Class A, Group 1) Class A, Group 1) I-3/-4-4/-4-5/-4-6/-4-8/- Group 1)	
Safety				EN 61010-1		
					·	

		Operating enviro	nment Indooi	Indoor use, Overvoltage Category II		
		Operating	0°C to	0°C to 40°C		
		temperature ra	nge	0 0 10 40 0		
		Storage tempera	ature -10°C	-10°C to 70°C		
Environn	nent	range	-P.C.			
		Operating humi	aity 20%rh	20%rh to 80% RH (no condensation)		
		range Storage humidi	tv			
		range	^{ty} 90% F	90% RH or less (no condensation)		
		Altitude	Un to	Up to 2000m		
Dimens	sions (mm) (no	ot including protrus		/)×1116(H)×906(E))	
Weight	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	or molading produce		x. 200kg	,	
	lectrical spe	ecifications ASR2				
	ilootiilooli opt		210 00 11 (17)			
Model Input ra	atings	ASR243-351RK		ASR303-351RI	K	
Power t		Three-phase, De	elta or Y connec	tion		
	•	Three-phase, De				
Voltage	range ^{*1}	Three-phase, Y			actory specified	
Freque	ncy range	47Hz to 63Hz	Soffice Citoff. 300	V 400V±1070 1	actory specified	
Power f		0.95 or higher (ty	(n)			
Efficien		80% or higher	γρ.)			
	ım power					
consum	•	32kVA or lower		40kVA or lower		
	•	A CD 400 0E 4 DI	/	A CD 400 0E4DI	/	
Model AC outp	out	ASR133-351RI	`	ASR183-351RI	^	
		Single-phase	Polyphase	Single-phase	Polyphase	
Multi-ph	nase output	output	output	output	output	
<u> </u>	••	•	1P3W: 16kVA	Δ	1P3W: 20kVA	
Output	capacity	24kVA	3P4W: 24kVA	30kVA	3P4W: 30kVA	
			1P3W	1P2W	1P3W	
Mode		1P2W	3P4W (Y-		3P4W (Y-	
			connection)		connection)	
Setting	mode*3		Unbalance,		Unbalance,	
		0.00\/+= 475.0\	Balanced	0) / /=:=================================	Balanced	
Dhasa	Cotting			0V (sine and squa	are wave),	
Phase voltag	Setting Range ^{*4}	Setting Resolution: 0.01V / 0.1V 0.00Vpp to 500.0Vpp / 0.00Vpp to 1000Vpp (triangle and arbitrary				
e voltag	rvarige	• •		Vpp / 0.1Vpp / 1V		
C	Accuracy*5	±(0.3% of set +		γρρίο.Τγρρίτν	рр	
	Accuracy	±(0.570 01 3et 1	1P3W: 0.00V		1P3W: 0.00V	
			to 350.0V /		to 350.0V /	
			0.00V to		0.00V to	
			700.0V		700.0V	
			3P4W: 0.00V		3P4W: 0.00V	
Line vol	Itage setting		to 303.1V /		to 303.1V /	
range*6			0.00V to		0.00V to	
-			606.2V		606.2V	
			(sine wave		(sine wave	
			only)		only)	
					Setting	
		Resolution: Resolution:				
			resolution.		1 10001410111	

			0.01V / 0.1V		0.01V / 0.1V		
Maximum current*7		240A / 120A	80A / 40A	300A / 150A	100A / 50A		
Maximum peak		Four times of the maximum RMS current					
current*8	•	Four times of	the maximum Ki	vis current			
Load powe	er factor*9	0 to 1 (leading	phase or laggin	g phase, 45Hz to	65Hz)		
	Setting			, AC+DC Mode: 1	1.00Hz to		
Frequency	range		ing resolution: 0.0	01Hz / 0.1Hz			
	Accuracy	± 0.01% of se	t				
	Stability*10	± 0.005%					
Output on setting ran	ge ^{*11}	0.0° to 359.9° variable (Free / Fix selectable), 0.1° (1Hz to 500Hz), 1° (500Hz to 550Hz)					
Output off setting ran			variable (Free / I 00Hz to 550Hz)	Fix selectable), 0	.1° (1Hz to		
	J		3P4W:		3P4W:		
			L2 phase: 0°		L2 phase: 0°		
			to 359.9°		to 359.9°		
Setting ran			L3 phase: 0°		L3 phase: 0°		
phase ang	le ^{*12}		to 359.9°		to 359.9°		
			Setting		Setting		
			Resolution: 0.1°		Resolution: 0.1°		
			45Hz to 65Hz	•	45Hz to 65Hz:		
Phase ang	ıle		±1.0°	•	±1.0°		
accuracy*1			15Hz to		15Hz to		
,			550Hz: ±2.0°		550Hz: ±2.0°		
DC offset*1	14	± 20mV (typ.)					
Model		ASR243-351Rk	(ASR303-351R	K		
		e-phase output)					
Output cap	pacity	24kW		30kW			
Mode			the N terminal c				
	etting ange	-250.0V to +250 0.01V / 0.1V	0.0V / -500.0V to	+500.0V, Setting	Resolution:		
A	ccuracy*15	± (0.3% of set	+ 0.3V / 0.6V)				
Maximum	current*16	240A / 120A		300A / 50A			
Maximum current*17	peak	Four times of the maximum current					
Output Sta	hility Total	Harmonic Distort	ion Output volta	ae risina time an	d Rinnle noise		
Output Stability, Total Harmonic Distortion, C Line regulation ±0.1% or less (Phase				igo noing time and	a Rippic Holse		
Load regulation*18				6, via output term	inal)		
		<0.3%@1Hz~1	<u> </u>	,	·,		
Load regul	lation*19	<0.5%@100.1F	•				
Load regul	allon	<1%@500.1Hz					
Output valtage							
response time*20		Slow: 300)µs(typ.)				
		0.5Vrms / 1Vrm	s(typ.)				
Measured value display							
(All accuracy of the measurement function is indicated for 23 °C±5 °C.)							
(7 till doodild			Single phase	output Dolum	haca autout*27		
	2 Resolut	tion	Single-phase	output Polyp	hase output*27		
Voltage*22*		ion alue accuracy	Single-phase 0.01V / 0.1V 45Hz to 65Hz	-	hase output*27 to 65Hz: ± (0.5%		

		± (0.5% of rdg + 0.5V / 1V) 15Hz to 1000Hz: ± (0.7% of rdg + 1V / 2V)	of rdg + 0.5V / 1V) 15Hz to 1000Hz: ± (0.7% of rdg + 1V / 2V)			
	AVG value accuracy		DC: ± (0.5 % of rdg + 0.5V / 1V)	DC: ± (0.5% of rdg + 0.5V / 1V)		
	PEAK valu	e accuracy*24	45Hz to 65Hz and DC: ± (2% of rdg + 1V / 2V)	45Hz to 65Hz: ± (2% of rdg + 1V / 2V)		
	Resolution		0.01A / 0.1A			
Current* ²⁵	RMS value accuracy		45Hz to 65Hz and DC: ± (0.5% of rdg + 0.3A / 0.15A) 15Hz to 550Hz: ± (0.7% of rdg + 0.6A / 0.4A)	45Hz to 65Hz: ± (0.5% of rdg + 0.15A / 0.08A) 15Hz to 550Hz: ± (0.7% of rdg + 0.3A / 0.15A)		
	AVG value	accuracy	DC: ± (0.5% of rdg + 0.6A / 0.4A)	DC: ± (0.5% of rdg + 0.3A / 0.15A)		
	PEAK value accuracy*26		45Hz to 65Hz and DC: ± (2% of rdg + 3A / 1.5A)	45Hz to 65Hz: ± (2% of rdg + 1.5A / 0.75A)		
	Active	Resolution	0.1W / 1W / 10W			
	(W) Apparent	Accuracy*30	±(2% of rdg+9W)	±(2% of rdg+3W)		
Power*28*29		Resolution	0.1VA / 1VA / 10VA			
	(VA)	Accuracy	±(2% of rdg+18VA)	±(2% of rdg+6VA)		
	Reactive	Resolution	0.1VAR / 1VAR / 10VAR	2		
	(VAR)	Accuracy*31	±(2% of rdg+18VAR)	±(2% of rdg+6VAR)		
Power	Range		0.000~1.000			
factor	Resolution		0.001			
Harmonic	Range			Up to 100th order of the fundamental wave		
voltage	Full Scale		200V / 400V, 100%			
Effective	Resolution		0.01V / 0.1V, 0.1%			
value (rms) Percent (%) (AC-INT and 50 / 60 Hz only) *32	Accuracy ^{∗33}		Up to 20th: ± (0.2% of ro 21th to 100th: ± (0.3% of	of rdg + 0.5V / 1V)		
Harmonic	Range		Up to 100th order of the			
current Effective value (rms)	Full Scale		ASR243-351RK: 252A / 126A,100% ASR303-351RK: 315A/157.5A,100%	ASR243-351RK: 84A / 42A,100% ASR303-351RK: 105A/52.5A,100%		
Percent	Resolution		0.01A / 0.1A, 0.1%			
(%) (AC-INT and 50 / 60 Hz only) *32	Accuracy*34		Up to 20th: ± (1% of rdg + 3A / 1.5A) 21th to 100th: ± (1.5% of rdg + 3A / 1.5A)	Up to 20th: ± (1% of rdg + 1A / 0.5A) 21th to 100th: ± (1.5% of rdg + 1A / 0.5A)		
Others						
Protections		VP, OVP, OCP, imit	OTP, OPP, Fan Fail, Pea	k and RMS Current		

Parallel	Not supported		
Display	TFT-LCD, 7 inches		
Memory function	Store and recall settings, Basic settings: 10		
	Number of	253 (nonvolatile)	
	memories	255 (Horivolatile)	
Arbitrary Wave	Waveform	4096 words	
Albiliary wave	length	4090 Words	
	Amplitude resolution	16 bits	
		TO DIES	

3-5-6. General Specifications ASR243-351RK / ASR303-351RK

Model			ASR243-351RK ASR303-351RK	
	Standard	USB	Type A: Host, Type B: Slave, Speed: 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	
		RS- 232C	Complies with the EIA-RS-232 specifications	
	Optional 1	GPIB	SCPI-1993, IEEE 488.2 compliant interface	
Insulation resistance	Between input and chassis, output and chassis, input and output		DC 500V, $30M\Omega$ or more	
Withstand voltage	Between input and chassis, output and chassis, input and output		AC 1500V or DC 2130V, 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	
	Operating en	vironment	Indoor use, Overvoltage Category II	
	Operating temperature	range	0°C to 40°C	
Environment	Storage temperature range Operating humidity range Storage humidity range		-10°C to 70°C	
Environment			20%rh to 80% RH (no condensation)	
			90% RH or less (no condensation)	
	Altitude		Up to 2000m	
Dimensions (mm)			598(W)×1116(H)× 598(W)×1472(H)×	

ions)	906(D) 906(D)				
	Approx. 250kg Approx. 305kg				
ecifications ASR363-35	1RK				
Three-phase, Delta or Y	connection				
Three-phase, Delta:200	V~240V±10% or				
Three-phase, Y connection: 380V~460V±10% Factory specified					
47Hz to 63Hz					
0.95 or higher (typ.)					
80% or higher					
48kVA or lower					
Single-phase output	Polyphase output				
36kVA	1P3W: 24kVA 3P4W: 36kVA				
1P2\W	1P3W				
11 Z V V	3P4W (Y-connection)				
	Unbalance, Balance				
	o 350.0V (sine and square wave), Setting				
0.00Vpp to 500.0Vpp / 0.00Vpp to 1000Vpp (triangle and arbitrary wave), Setting Resolution: 0.01Vpp / 0.1Vpp / 1Vpp					
±(0.570 01 3et+0.547 14	1P3W: 0.00V to 350.0V / 0.00				
	V to 700.0 V				
	3P4W: 0.00V to 303.1V / 0.00V				
	to 606.2V				
	(sine wave only)				
	Setting Resolution: 0.01V /				
	0.1V				
	設定分解能: 0.01V / 0.1V				
360A / 180A	120A / 60A				
Four times of the maxim	um RMS current				
0 to 1 (leading phase or lagging phase, 45Hz to 65Hz)					
AC Mode: 15.00Hz to 550.0Hz, AC+DC Mode: 1.00Hz to					
550.0Hz, Setting resolut	ion: 0.01Hz / 0.1Hz				
± 0.01% of set					
± 0.005%					
0.0° to 359.9° variable (f	Free / Fix selectable), 0.1° (1Hz to				
500Hz), 1° (500Hz to 550Hz)					
0.0° to 359.9° variable (Free / Fix selectable), 0.1° (1Hz to					
500Hz), 1° (500Hz to 55	,				
	3P4W:				
	L2 phase: 0° to 359.9°				
	L3 phase: 0° to 359.9° Setting Resolution: 0.1°				
	45Hz to 65Hz: ±1.0°				
	15Hz to 550Hz: ±2.0°				
	Three-phase, Delta or Y Three-phase, Delta: 200 Three-phase, Y connecti 47Hz to 63Hz 0.95 or higher (typ.) 80% or higher 48kVA or lower Single-phase output 36kVA 1P2W 0.00V to 175.0V / 0.0V to Resolution: 0.01V / 0.1V 0.00Vpp to 500.0Vpp / 0 wave), Setting Resolutios ±(0.3% of set+0.5V / 1V) 360A / 180A Four times of the maxim 0 to 1 (leading phase or AC Mode: 15.00Hz to 55 550.0Hz, Setting resolut ± 0.01% of set ± 0.005% 0.0° to 359.9° variable (F 500Hz), 1° (500Hz to 55				

DC offset*14 ±		± 20mV (typ.)				
DC output	only single	-phase output)				
Output capacity		36kW				
Mode		Floating output, the N terminal can be grounded				
	etting		50.0V to +250.0V / -500.0V to +500.0V, Setting Resolution:			
•	ange	0.01V / 0.1V				
e A	ccuracy*1	±(0.3% of set	+ 0.3V / 0.6V)			
Maximum o		360A / 180A				
Maximum p	oeak	Four times of the maximum current				
current*17						
Output Sta	bility, Total	Harmonic Disto	rtion, Output voltage rising t	ime and Ripple noise		
Line regula			(Phase voltage)			
Load regula	ation ¹⁸	±1 V (phase	voltage, 0 to 100%, via outp	out terminal)		
Distortion of Output*19	of	<0.3% @1Hz	to 100Hz, <0.5% @100.1Hz	to 550Hz		
Output volt response ti		Slow: 30	00μs(typ.)			
Ripple nois		0.5Vrms / 1Vrr	ms(typ.)			
Measured	value displ	2V				
			ction is indicated for 23 °C±	5 °C.)		
(- ,		Single-phase output	Polyphase output*27		
	Resolution		0.01V / 0.1V	•		
			45Hz to 65Hz and DC: ±	45Hz to65 Hz: ± (0.5%		
*22*2	RMS va	lue accuracy	(0.5% of rdg + 0.5V / 1V)	of rdg + 0.5V / 1V)		
Voltage*22*2	•	,	15Hz to 550Hz: ± (0.7% of rdg + 1V / 2V)	15Hz to 550Hz: ± (0.7% of rdg + 1V / 2V)		
			DC: ± (0.5% of rdg +	DC: ± (0.5% of rdg +		
	AVG val	ue accuracy	0.5V / 1V)	0.5V / 1V)		
	DEAKW	oluo ooguroov*2	45Hz to 65Hz and DC: +	45Hz to 65Hz: ± (2% of		
	PEAK value accuracy*24		(2% 01 lag + 1v / 2v)	rdg + 1V / 2V)		
	Resoluti	on	0.01A / 0.1A			
			45Hz to 65Hz and DC: ±	45Hz to 65Hz: ± (0.5%		
	RMS va	lue accuracy	(0.5% of rdg + 0.3A/ 0.15A)	of rdg + 0.15A / 0.08A)		
.*25	Tano va	ido docardoy	15Hz to 550Hz: ± (0.7%	15Hz to 550Hz: ± (0.7%		
Current*25			of rdg + 0.6A / 0.4A)	of rdg + 0.3A / 0.15A)		
	AVC val	ue accuracy	DC: ± (0.5% of rdg +	DC: ± (0.5% of rdg +		
	AVO Vai		0.6A / 0.4A)	0.3A / 0.15A)		
		-1*2	45Hz to 65Hz and DC:	45Hz to 65Hz: ± (2%		
	PEAK V	alue accuracy ^{*2}	⁶ ± (2% of rdg + 3A / 1.5A)	of rdg + 1.5A / 0.75A)		
	Active	Resolution	0.1W / 1W / 1 0W			
	(W)	Accuracy*30		± (2% of rdg + 3W)		
Power*28*29	Apparer		0.1VA / 1VA / 10VÁ			
	(VA)	Accuracy	± (2% of rdg + 18VA)	± (2% of rdg + 6VA)		
	Reactive		0.1VAR / 1VAR / 10VAR			
	(VAR)	Accuracy*3	, , , , , , , , , , , , , , , , , , ,	± (2% of rdg + 6VAR)		
Power Range 0.000~1.000						

factor	Resolu	ıtion	0.001			
Harmonic	Range			Up to 100th order of the fundamental wave		
voltage	Full Scale			200V / 400V, 100%		
Effective	Resolution			/ 0.1V, 0.1%		
value (rms) Percent (%) (AC-INT and 50 / 60 Hz only) *32	Accuracy*33		Up to	20th: ± (0.2% of re	dg + 0.5V / 1V) of rdg + 0.5V / 1V)	
Harmonic	Range		Un to	100th order of the	fundamental wave	
current	Full Sc			378A / 189A,100% 126A / 63A,100%		
Effective	Resolu			/ 0.1A, 0.1%	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
value (rms) Percent (%) (AC-INT and 50 / 60 Hz only) *32	Accuracy*34		Up to rdg + 3	20th: ± (1% of 3A / 1.5A) 5 100th: ± (1.5% + 3A / 1.5A)	Up to 20th: ± (1% of rdg + 1A / 0.5A) 21th to 100th: ± (1.5% of rdg + 1A / 0.5A)	
Others						
Protections		UVP, OVP, C Limit	OCP, OTP, O	PP, Fan Fail, Pea	k and RMS Current	
Parallel		Not supporte	ed			
Display		TFT-LCD, 7				
Memory fund	ction		call settings	, Basic settings: 1	0	
		Number of memories	253 (no	onvolatile)		
Arbitrary Wa	engin		4096 w	ords		
0.5.0.0		Amplitude resolution	16 bits	DI		
3-5-8. Gene	rai Spe	ecifications AS	SR363-351	RK		
			USB	2.0, USB-CDC /		
			LAN	Password, Gate	DNS IP Address, User way IP Address, ddress, Subnet Mask	
Interface	Standard	External	External Signal External Control V/I Monitor Outp	I I/O		
		RS- 232C	Complies with the EIA-RS-232 specifications			
		Optional 1	GPIB	SCPI-1993, IEE interface	E 488.2 compliant	
Insulation resistance	chassis olithiit		ıt and	DC 500V, 30MΩ	or more	
Withstand voltage		Between input and chassis, output and chassis, input and output		AC 1500V or DC 2130V, 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
	Operating environment	Indoor use, Overvoltage Category II
	Operating temperature range	0°C to 40°C
Enginament	Storage temperature range	-10°C to 70°C
Environment	Operating humidity range	20%rh to 80% RH (no condensation)
	Storage humidity	90% RH or less (no condensation)

90% RH or less (no condensation)

598(W)×1650(H)×906(D)

Up to 2000m

Approx. 370kg

Note

Weight

- ※1.Y connection is three-phase, five-wire, Delta connection is three-phase, four-wire.

 (Accessories will be provided)
- ※2.In the case of AC-INT mode, the rate output voltage, resistance load at maximum output current, 45Hz to 65Hz and sine wave output only.
- *3.Can be only set in 3P4W mode.
- *4. For phase voltage setting in polyphase output. In balance mode all phase are collectively set and in unbalance mode each phases are individually set.
- %5.For an output voltage of 10V to 175V / 20V to 350, sine wave, an output frequency of
 45Hz to 65Hz, no load, DC voltage setting 0V (AC+DC mode) and 23°C ± 5°C. For
 phase voltage setting in the polyphase output.
- ※6.Line voltage only can be set in balance mode.

range Altitude

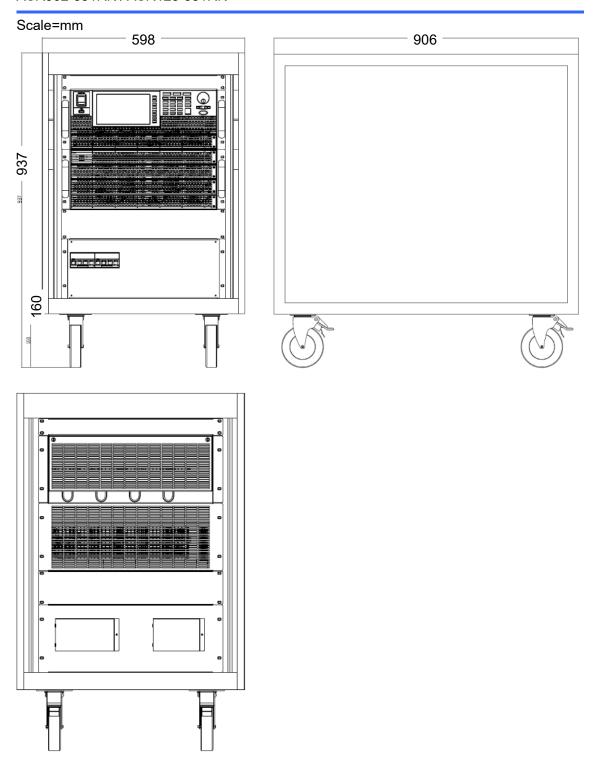
Dimensions (mm) (not including protrusions)

- ※7.If the output voltage is higher than rated value, this is limited to satisfy the power capacity. If there is the DC superimposition, the active current of AC+DC satisfies the maximum current. In the case of 40Hz or lower or 400Hz or higher, and that the ambient temperature is 40 degree or higher, the maximum current may decrease.
- 38. With respect to the capacitor-input rectifying load. Limited by the maximum current.
- ※9.External power injection or regeneration which is over short reverse power flow capacity is not available.
- *10.*For 45Hz to 65Hz, the rated output voltage, no load and the resistance load for the maximum current, and the operating temperature range.
- 11.L1, L2 and L3 phase can be set independ at independ mode in the polyphase output.
- ¾12.Can be set only with independ mode in polyphase output.
- *13. For an output voltage of 50V or higher, sine wave, same load and voltage condition for all phase.
- ¾14.In the case of the AC mode and output voltage setting to 0 V, 23°C ± 5°C
- %15.For an output voltage of -250V to -10V, +10V to +250V / -500V to -20V, +20V to +500V, no load, AC voltage set to 0V (AC+DC mode) and 23°C \pm 5°C

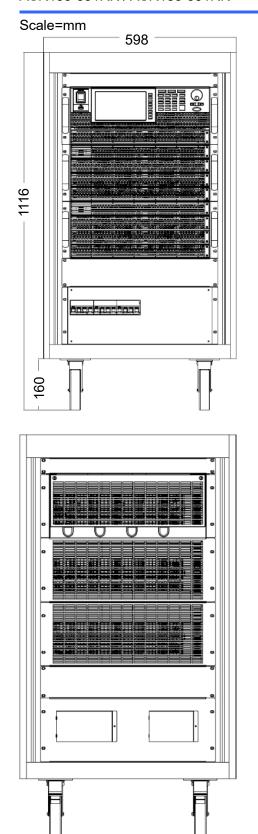
- ※16.If the output voltage is higher than rated value, this is limited to satisfy the power capacity. If there is the AC superimposition, the active current of AC+DC satisfies the maximum current. And the ambient temperature is 40 degree or higher, the maximum current may decrease.
- %17.Instantaneous within 3ms, limited by the maximum current at rated output voltage.
- ※18.For an output voltage of 75V to 175V / 150V to 350V, a load power factor of 1, stepwise change from an output current of 0A to maximum current (or its reverse), using the output terminal on the rear panel.
- ※19.50% or higher of the rated output voltage, the maximum current or lower, AC and AC+DC modes, THD+N. For the polyphase output, it is a specification for phase voltage setting.
- ※20.For an output voltage of 100V / 200V, a load power factor of 1, with respect to stepwise change from an output current of 0A to the maximum current (or its reverse). 10% ~ 90% of output voltage.
- ※21.For 5Hz to 1MHz components in DC mode using the output terminal on the rear panel.
- ※22.In the polyphase output, the specification is for phase voltage, and the DC average value display cannot be selected.
- ※23.Accuracy values are in the case that the output voltage is within voltage setting range.
- *24. The accuracy is for output waveform DC or sine wave only.
- ※25.Accuracy values are in the case that the output current is 5% to 100% of the
 maximum current.
- *26. The accuracy is for output waveform DC or sine wave only.
- *27.In the polyphase output, these are the specifications for each phase.
- *28. For an output voltage of 50 V or greater, an output current in the range of 10% to 100% of the maximum current, DC or an output frequency of 45Hz to 65Hz.
- ※29. The apparent and reactive powers are not displayed in the DC mode.
- 30. For the load with the power factor 0.5 or higher.
- 31. For the load with the power factor 0.5 or lower.
- *32.The measurement does not conform to the IEC or other standard. Phase Voltage and Phase Current.
- 33. For an output voltage of 10V to 175V / 20V to 350V.
- 34. An output current in the range of 5% to 100% of the maximum current.

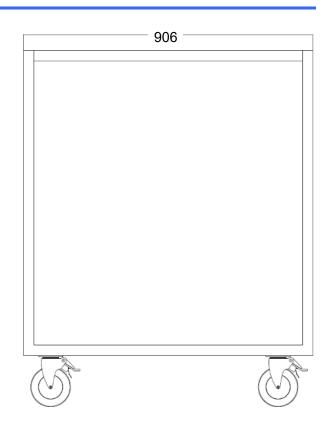
3-6. Dimensions

ASR902-351RK / ASR123-351RK

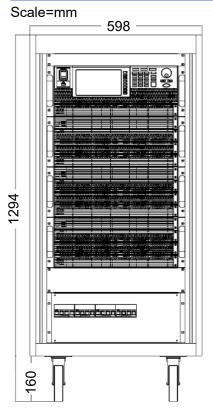


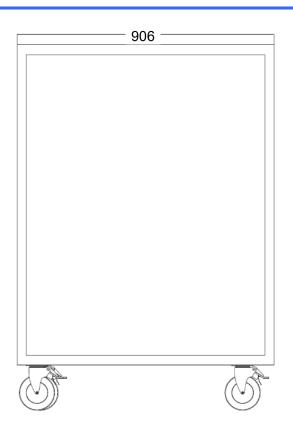
ASR133-351RK / ASR183-351RK

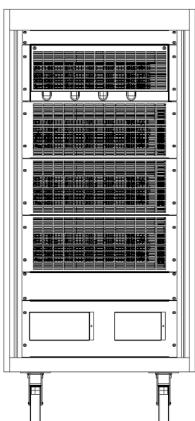




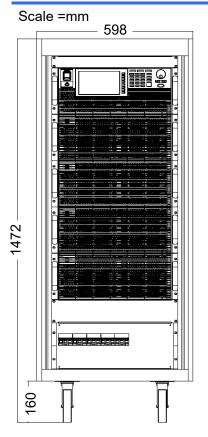
ASR243-351RK

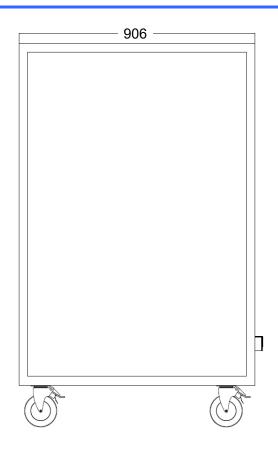


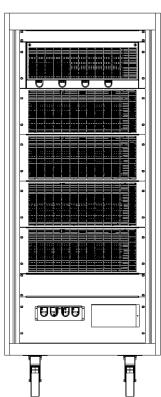


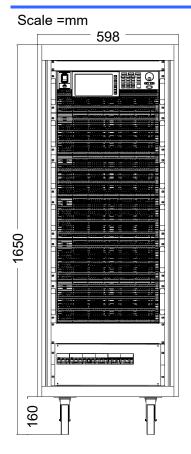


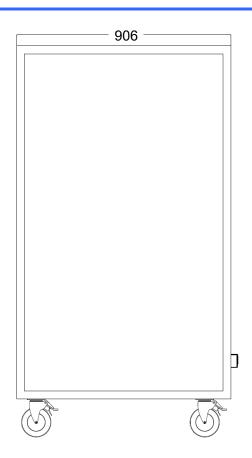
ASR303-351RK

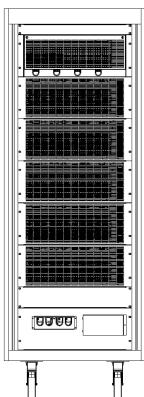














TEXIO TECHNOLOGY CORPORATION

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