
Instruction Manual

Power Supply
WSE-3200
PowerStation III

Version 1
May 5, 2023





Table of Contents

Introduction.....	1
Safety precautions	1
Use Precautions	2
Other precautions	5
1. Overview	7
1.1. Purpose of use	7
2. Unpacking	8
2.1. Confirmation when unpacking.....	8
2.2. Product component	8
3. Name and function of each parts.....	10
3.1. Front panel.....	11
3.2. Rear panel	18
3.3. Right-hand side	19
3.4. Left-hand side	20
3.5. Accessories	21
3.6. Automatic recovery from power failure	23
3.7. Output control and crossover function	24
3.8. Error indicator	27
4. Preparation.....	30
4.1. Installation environment	30

4.2. Cable Connection	31
5. Operation	34
5.1. Start up	34
5.2. Selecting program mode	35
5.3. Manual mode	37
5.4. Preset mode	48
5.5. User mode	52
5.6. Chain mode	55
5.7. Saving into memory	59
6. Troubleshooting	62
6.1. PowerStation III doesn't work	62
6.2. Error Indication	63
7. Maintenance	66
7.1. Cleaning	66
7.2. Inspection	66
7.3. Maintenance and Repair	67
7.4. Warranty	68
8. Specifications	69
8.1. Specifications	69

Introduction

Thank you very much for purchasing our ATTO scientific unit, WSE-3200 PowerStation III. We are providing this instruction manual and unit for a better user experience.

We would like to ask both fresh users and experienced users to read through this manual thoroughly before beginning using this unit.

If you have any other questions about your purchased product or this instruction manual, please do not hesitate to contact us. Our contact information is listed at the end of this manual.

Safety precautions

Correct operation is prerequisite in order to use this unit safely. Please read through this instruction manual before use, and do not use the unit until you fully understand the contents. How to use and the safety precautions listed on this manual are specific to usage of this particular unit only. Never use the unit for other purposes than those listed on this Manual. Any other usages of this unit than those listed on this manual would be strictly at your own responsibility.

The first-time user is asked to receive guidance from a person with correct knowledge and understand principle and method before use. Both the fresh users and experienced users keep this manual at hand for effective use. The only way to avoid electric shock and malfunction of the unit is to operate it correctly in accordance with this manual.

Feel free to contact us for any questions about principle of electrophoresis, operation, maintenance and inspection.

Safety Notation

The following signs are used on this instruction manual and on the product main body for your safe use and maintenance of the unit. Please ensure your understanding of the meaning of these signs and follow each item correctly.

Symbol	Description
 Danger	This indicates that a high risk of human death or serious injury is likely occurring if handled incorrectly or by neglecting this indication.
 Warning	This indicates that human death or injury is possible if handled incorrectly or by neglecting this indication.
 Caution	This indicates that the risk of property damage is expected if mishandled or by neglecting this indication.
	This indicates information related to the important portion.
	This indicates some hint related to operation.
	This indicates prohibited activities.

Use Precautions

These are precaution items to prevent fire, electrical shock, other type of accident and failure. Please be sure to follow and understand these items.

Danger

Grounding  	Never use this unit unless connecting the unit to the ground. There might be a risk of electrical shock or death. Please connect the power cable attached to this unit to the 3-pole ground outlet.
Power connection   	Please check visually if any deformation or corrosion exists on an electrode terminal or power plug, any blemish on the power cable, or any peel-off of the insulating sheath before actuating the unit. These might cause fire because of poor contact or electrical shock. In such a case, please contact us after stopping the use of the unit and unplugging the power plug from the outlet. Be sure to turn off the power switch, firmly hold the power plug itself, and unplug it without pulling the cable.
No wet hand  	Never operate the unit with wet hands. In addition, never touch the power plug or connecting terminal with wet hands. These can cause electrical shock or failure. Never use the unit in wet condition. These can cause electrical shock or failure.
Main body 	Never remove the top lid of the main body nor the rear panel. These can cause electrical shock or failure.
Fuse 	Please turn off the power switch and unplug the power cable when you replace the fuse. This can cause electrical shock.
Main body 	Never put foreign materials into the airflow orifice. This can cause an electrical shock or failure.
Maintenance 	Please quit using the unit immediately if anything abnormal happens during unit usage or if any abnormality/failure is suspected. Also, do not use the unit if you find any failure at inspection. These can cause electrical shocks or damage to the unit. Contact us if you detect any abnormality, trouble or failure.

 Warning

Installation location 	Please avoid installation on places such as a wobbling table, tilted location, or heavily vibrating place. Install the unit on horizontal places with safe and hard surfaces, such as a lab bench.
Main body 	This unit is not an explosion-proof structure. Install this unit away from any places with the possibility of exposure to fire or flammable gasses.
Migration 	Never move the unit during operation. Cords may get entangled, which might cause rollover. Or, cords may be damaged, which might cause fire or electrical shock. Please make sure to turn the unit power switch OFF, and pull out the power cable and all wiring cables before migration.
Maintenance 	Please be sure to turn the unit power switch OFF and pull out the power cable before performing maintenance and cleaning. These might cause electrical shock. Please ask us for periodical maintenance, inspection and calibration so as to maintain good performance and safety of the unit.
Disassemble prohibition 	Never disassemble or modify the unit. Adjustment and repair work of the product should be done by our service staff in charge. When adjustment or repair is required, please ask our company. Any accident caused by your disassembling or modification would be outside of our responsibility.
Fuse 	Never use other fuses than those specified by this manual or items written on the rear panel. Failure to follow instructions may cause fire at the time of failure.
Seal group 	Never peel off the Warning Seal. The seals indicate dangerous areas. If any seal comes off, please contact us.

Caution

Power cable 	If the unit is used outside of Japan, please prepare a power cable complies with the standard of the country where the unit is used. Use of a non-standard power cable could cause excessive heat and/or fire. If you have any questions, inquire our sales agent or company.
Dew condensation 	When the unit is quickly moved from a low-temperature area (low-temp. room, cold outdoor, etc.,) to a high-temperature area (warm room, etc.,), there is possibility of [Condensation], i.e. moisture in the air becomes water drops. If condensation happens within the unit, some parts may short out. When the unit is moved from a low-temperature area to a high-temperature area, set the unit where there is plenty of ventilation and away from direct sunlight, and turn the unit power on AFTER the unit gets to the same temperature as the room temperature.

Notice

Seals 	Never peel off nameplate seals. These indicate important information for maintenance and control of the unit.
--	--

Other precautions

Application

WSE-3200 PowerStation III is the power supply dedicated to electrophoresis unit and blotting equipment. Never use the unit for other applications.

Export

Export of specific work and cargo are controlled by Foreign Exchange Laws and Cabinet Order/Ministerial Orders of Foreign Trade Control Laws and those controls are applied to this unit.

Even if the unit is not applicable to the Cabinet Order, it is required to submit documents accordingly and if it is applicable, then obtain export license from the Ministry of Economy, Trade and Industry, and then submit the license to the customs office.

When you export our product, please confirm with your supplier or our customer service department in advance.

Trademarks and copyright

Copyright approval is required when you make copy/reprint a part or whole of the instruction manual. Specifications of the unit and contents of the instruction manual may be changed without an advanced notice.

1. Overview

This chapter describes the unit application.

1.1. Purpose of use

PowerStation III is the power supply unit for electrophoresis that can be connected to electrophoresis and blotting equipment(s).

2. Unpacking

This chapter describes items and unit configuration to be confirmed at the time of unpacking.

2.1. Confirmation when unpacking

Upon arrival of the product, please confirm whether the main body and accessories are packed correctly or if any defects exist.

In case there is any inadequacy, deficiency, etc., please inform your supplier or our company immediately.

Please perform your confirmation as above at the time of unpacking within one week upon arrival of the unit. Confirmation after more than one week may result in not receiving compensation for defects or missing articles.

2.2. Product component

This product consists of a main body and accessories.

Main body

Product name	Quantity
WSE-3200 PowerStation III	1

Accessories

Part Name	Quantity
Instruction manual, WSE-3200 PowerStation III	1

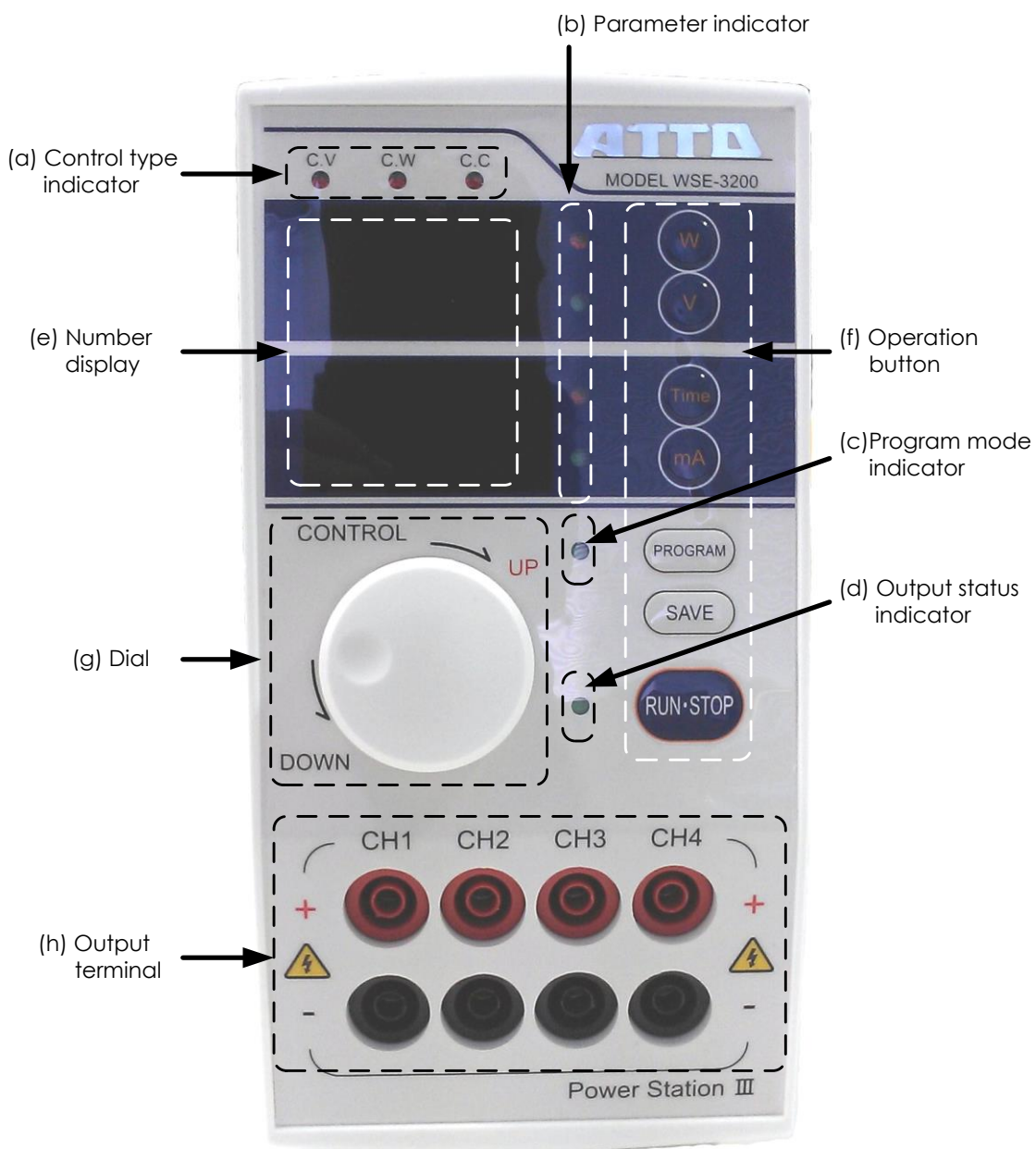
Power cable	1
Preset mode parameter list	1
Clear case for preset mode parameter list	1
Double-sided tape	2

3. Name and function of each parts

This chapter describes names and functions of each part.

3.1. Front panel

Names and functions on the front panel are described.



(a) Control type indicator

Voltage, wattage or current of electrical output is controlled to keep it at a preset value. When output exceeds preset parameters, output correction is done by the power source controller inside to resume set values. The control type indicator shows which electrical parameter is under control.

Symbol	Description
C.V	Constant Voltage Control: The LED is ON when output is under control for constant voltage
C.W	Constant Wattage Control: The LED is ON when output is under control for constant wattage
C.C	Constant Current Control: The LED is ON when output is under control for constant current

Also crossover function is activated with these controls. The crossover function is that the controlled type will be changed automatically depending on electrophoresis conditions and electrical load.

(b) Parameter indicator

The parameter indicator shows which kind of value is displayed on the number display.

Indicator	Button	Description
Red	 	Power value is displayed. Unit is wattage [W].
Green	 	Voltage value is displayed. Unit is voltage [V]
Red	 	Time is displayed. Unit is minute [m]
Green	 	Current value is displayed. Unit is mill ampere [mA]

(c) Program mode indicator

PowerStation III has four ways how electrophoresis parameters are defined. The program mode indicator shows which way is selected as below.

Indicator		Mode	Description
		Manual mode (Extinction)	This mode is used when parameters for W, V, Time and mA are required to be set arbitrarily.
Green		Preset mode (Lights-up)	Parameters corresponding to electrophoresis and condition to be used when connecting the unit to ATTO electrophoresis equipment.
Green		User mode (Lights-up)	This mode is used when saving/retrieving conditions that were set by user.
Green		Chain mode (Lights-up)	The Chain Mode is used when the user-set condition is executed continuously in order.

(d) Output status indicator

The output status indicator shows the status of the unit.

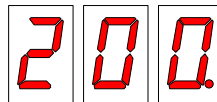
Indicator		Status	Description
		Output stop status (extinct)	Status becomes this way when there is no output. LED is turned off.
Green		Output halt status (flashes)	The status becomes this way when the status changes from output to halt. The LED flashes.
Green		Status under output (Lights-up)	The status becomes this way when it is in output status. The LED is lit.

(e) Number display

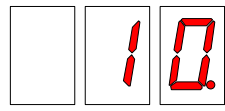
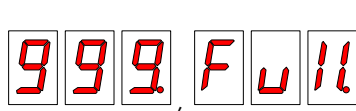
Number display shows preset parameters, actual output values and error status.

Upper line

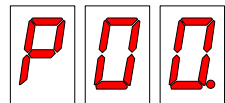
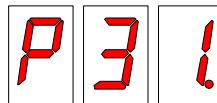
When W parameter indicator lights, Power value [W] is displayed.

 - 

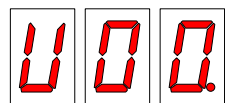
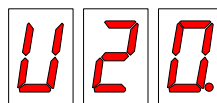
When V parameter indicator lights, Voltage value [V] is displayed.

 - 

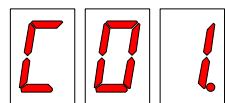
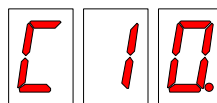
When preset mode is selected, Selected preset parameter number is displayed.

 - 

When user mode is selected, Selected user-defined parameter number is displayed.

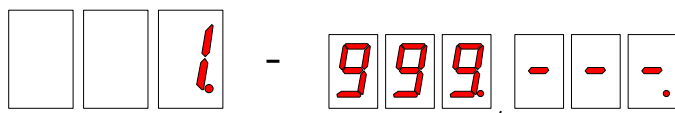
 - 

When chain mode is selected, Selected chain mode number is displayed.

 - 

Lower line

When T parameter indicator lights, Time value [minute] is displayed



When mA parameter indicator lights, Current value [mA] is displayed



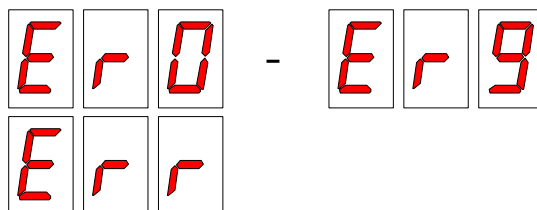
When user ode is selected, The destination where the parameters are saved is displayed



When chain mode is selected, The destination where the parameters are saved is displayed



When error is occurred, Error number is displayed.



Please refer to [3.8 Error indication function] for detail.

(f) Operation button

These buttons are used for setting parameter, selecting program mode, saving the parameter to internal memory and changing output conditions.

3.1 Front panel

Button	Description
	Power button ([W] button)
	Voltage button ([V] button)
	Time button ([Time] button)
	Current button ([mA] button)
	Program mode button ([Program] button)
	Save button ([Save] button)
	Run/Stop button ([Run/Stop] button)

(g) Dial

Dial is used for changing parameter value or memory number by turning it. When you rotate the dial faster, the number changes at an accelerated pace.

Parameter value increases with CW rotation



Parameter value decreases with CCW rotation

(h) Output terminals

Connect lead wire from electrophoresis equipment or blotting equipment to output terminal. Maximum of four (4) sets can be connected.

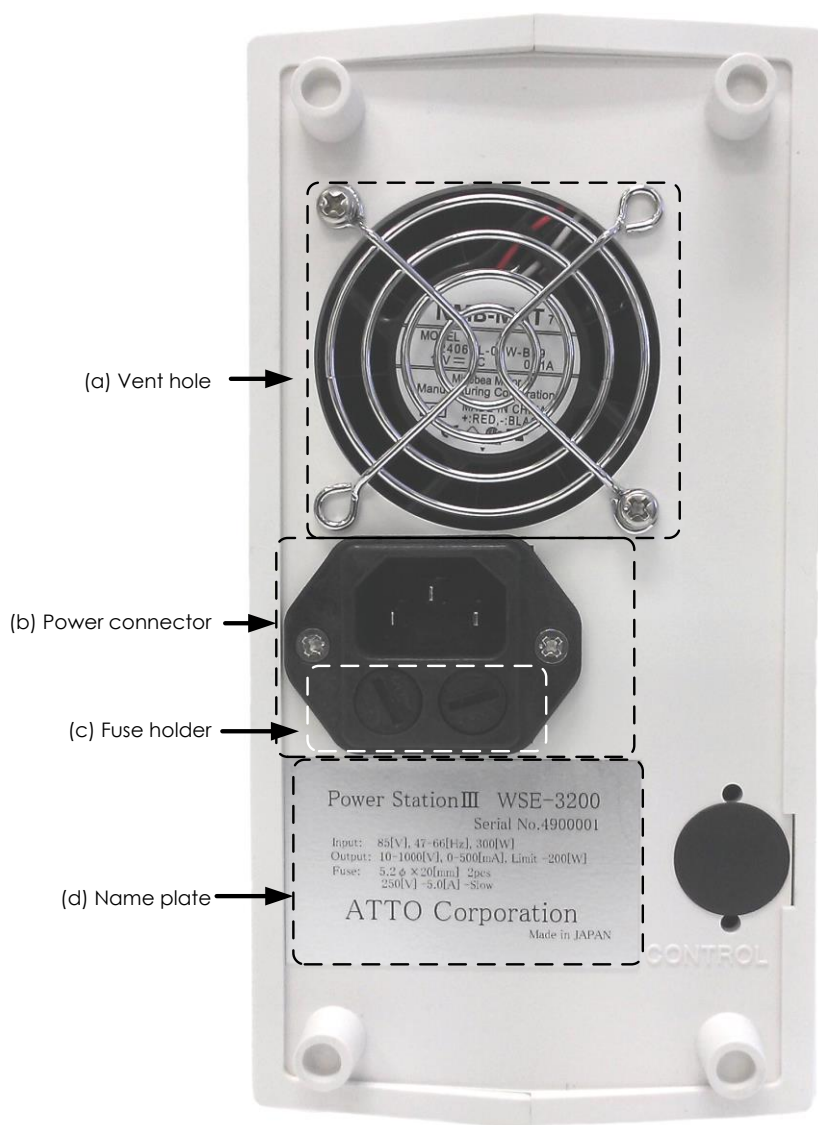
Connector	Description
	Anode (+) terminal connected with RED lead wire
	Cathode (-) terminal connected with BLACK lead wire



Be careful of connecting multiple numbers of electrophoresis units because total output of the current amount cannot be made beyond 500mA (the maximum output current allowable to PowerStation III).

3.2. Rear panel

Name and function of rear panel are described.



(a) Vent hole

This is an airflow opening to take in air for heat radiation.

(b) Power connector

This is a connector to connect the attached power cable.

(c) Fuse holder

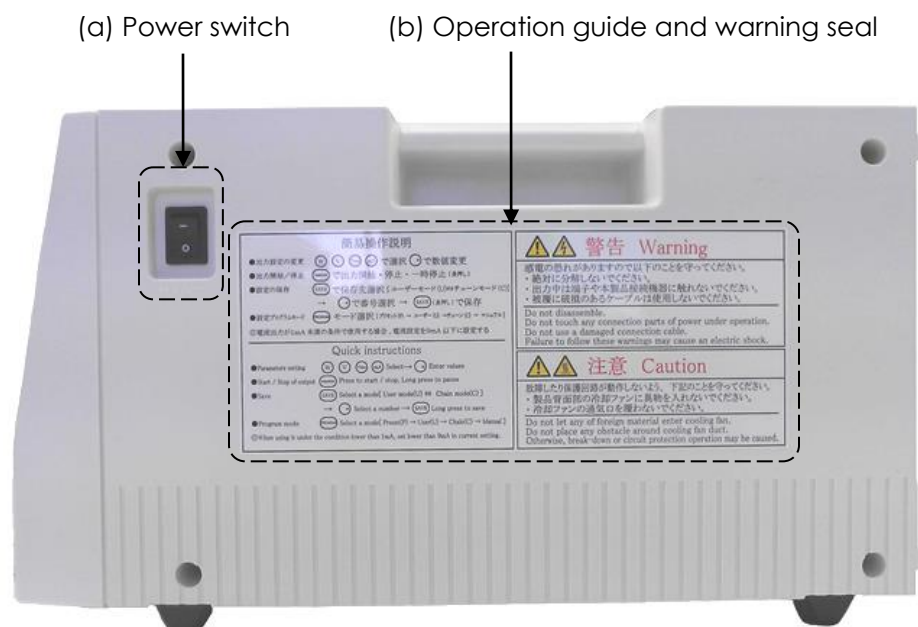
Fuses are housed here.

(d) Nameplate

This is the label where model number, production number, power consumption, input voltage condition, input frequency condition, company name and manufacturing country are indicated.

3.3. Right-hand side

Names and functions on the right-hand side are described.



3.4 Left-hand side

(a) Power switch

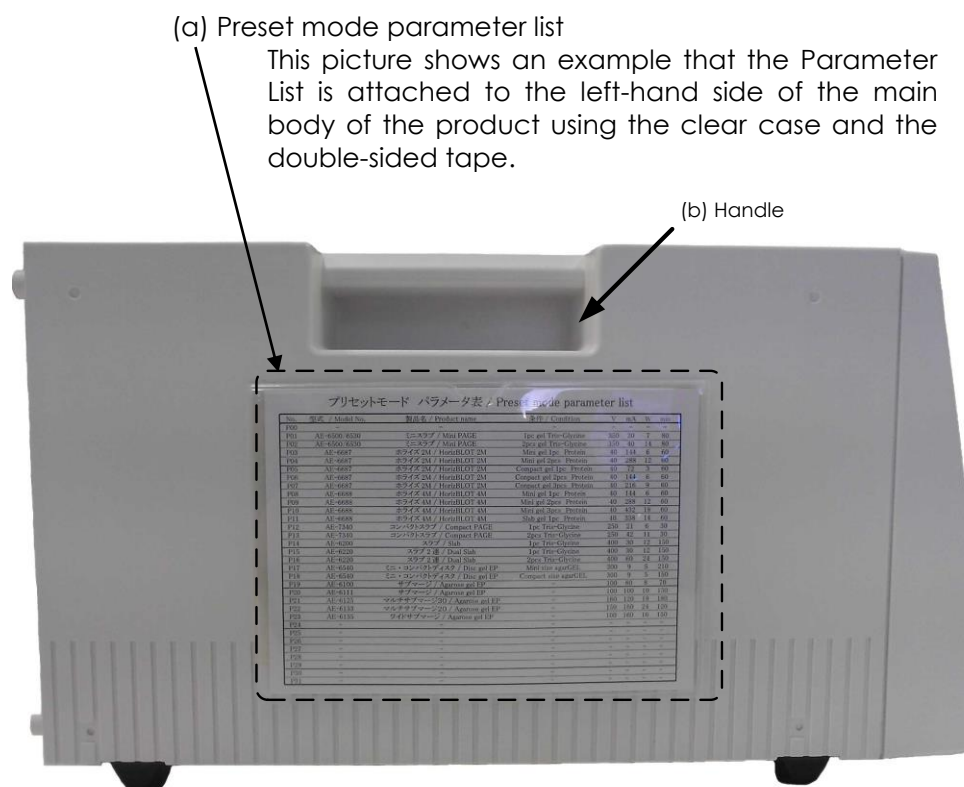
Use this button to turn power for PowerStation III ON/OFF.

(b) Operation guide and warning seal

Operation guide of PowerStation III, warnings and cautions are described on this seal.

3.4. Left-hand side

Names and functions on the left-hand side are described.



(a) Preset mode parameter list

Front surface is a correspondence table between Preset Mode Memory Numbers and Parameter Setting of ATTO Electrophoresis Equipment.

The table where parameter settings for User Mode/Chain Mode can be entered is printed on the rear surface.

(b) Handle

Handle to hold PowerStation III.

3.5. Accessories

Names and functions of accessories are described here.

WSE-3200 PowerStation III Instruction Manual

This is it.

Power cable

This is the cable which connects the PowerStation III main body to the power outlet.



Preset mode parameter list

This is an example table in which you can write a list of parameters in a preset mode saved in the power source itself, and parameter information related to user mode and chain mode.

Front side

プリセットモード パラメータ表 / Preset mode parameter list							
No.	型式 / Model No.	製品名 / Product name	条件 / Condition	V	mA	W	min
P00	-	-	-	-	-	-	-
P01	AE-6500/6530	ミニスラブ / Mini PAGE	1pc gel Tris-Glycine	350	20	7	80
P02	AE-6500/6530	ミニスラブ / Mini PAGE	2pcs gel Tris-Glycine	350	40	14	80
P03	AE-6687	ホライズ 2M / HorizBLOT 2M	Mini gel 1pc Protein	40	144	6	60
P04	AE-6687	ホライズ 2M / HorizBLOT 2M	Mini gel 2pcs Protein	40	288	12	60
P05	AE-6687	ホライズ 2M / HorizBLOT 2M	Compact gel 1pc Protein	40	72	3	60
P06	AE-6687	ホライズ 2M / HorizBLOT 2M	Compact gel 2pcs Protein	40	144	6	60
P07	AE-6687	ホライズ 2M / HorizBLOT 2M	Compact gel 3pcs Protein	40	216	9	60
P08	AE-6688	ホライズ 4M / HorizBLOT 4M	Mini gel 1pc Protein	40	144	6	60
P09	AE-6688	ホライズ 4M / HorizBLOT 4M	Mini gel 2pcs Protein	40	288	12	60
P10	AE-6688	ホライズ 4M / HorizBLOT 4M	Mini gel 3pcs Protein	40	432	18	60
P11	AE-6688	ホライズ 4M / HorizBLOT 4M	Slab gel 1pc Protein	40	338	14	60
P12	AE-7340	コンパクトスラブ / Compact PAGE	1pc Tris-Glycine	250	21	6	30
P13	AE-7340	コンパクトスラブ / Compact PAGE	2pcs Tris-Glycine	250	42	11	30
P14	AE-6200	スラブ / Slab	1pc Tris-Glycine	400	30	12	150
P15	AE-6220	スラブ 2 連 / Dual Slab	1pc Tris-Glycine	400	30	12	150
P16	AE-6220	スラブ 2 連 / Dual Slab	2pcs Tris-Glycine	400	60	24	150
P17	AE-6540	ミニ・コンパクトディスク / Disc gel EP	Mini size agarGEL	300	9	5	210
P18	AE-6540	ミニ・コンパクトディスク / Disc gel EP	Compact size agarGEL	300	9	5	150
P19	AE-6100	サブマージ / Agarose gel EP	-	100	80	8	70
P20	AE-6111	サブマージ / Agarose gel EP	-	100	100	10	150
P21	AE-6125	マルチサブマージ30 / Agarose gel EP	-	160	120	19	180
P22	AE-6133	マルチサブマージ20 / Agarose gel EP	-	150	160	24	120
P23	AE-6135	ワイドサブマージ / Agarose gel EP	-	100	160	16	150
P24	-	-	-	-	-	-	-
P25	-	-	-	-	-	-	-
P26	-	-	-	-	-	-	-
P27	-	-	-	-	-	-	-
P28	-	-	-	-	-	-	-
P29	-	-	-	-	-	-	-
P30	-	-	-	-	-	-	-
P31	-	-	-	-	-	-	-

Rear side

ユーザーモード・チェーンモード パラメータ表 / User mode and Chain mode parameter list											
No.	V	mA	W	Time	Note	No.	V	mA	W	Time	Note
U00						U16					
U01						U17					
U02						U18					
U03						U19					
U04						U20					
U05						Chain mode					
U06						C01					
U07						C02					
U08						C03					
U09						C04					
U10						C05					
U11						C06					
U12						C07					
U13						C08					
U14						C09					
U15						C10					

Clear case for preset mode parameter list

This is the case to house preset mode parameter list for PowerStation III.



Double-sided tape: Two (2) sheets

This is an adhesive tape to paste the case onto the left-hand side of the PowerStation III main body.

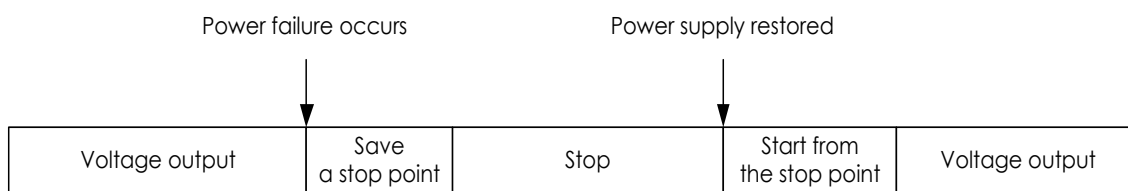


3.6. Automatic recovery from power failure

When power failure is detected during output, PowerStation III will save a stop point and automatically start from the stop point after power is recovered.

3.7 Output control and crossover function

The automatic power recovery sequence is shown below;



Warning

Please confirm whether any abnormality exists at the power input and output sides when power failure occurs.

3.7. Output control and crossover function

Voltage, wattage or current of electrical output is controlled to keep it at a preset value. When output exceeds preset parameters, output correction is done by the power source controller inside to resume set values.

Symbol	Description
C.V	Constant Voltage Control: The output is controlled to keep constant voltage at preset value.
C.W	Constant Wattage Control: The output is controlled to keep constant wattage at preset value.
C.C	Constant Current Control: The output is controlled to keep constant current at preset value.

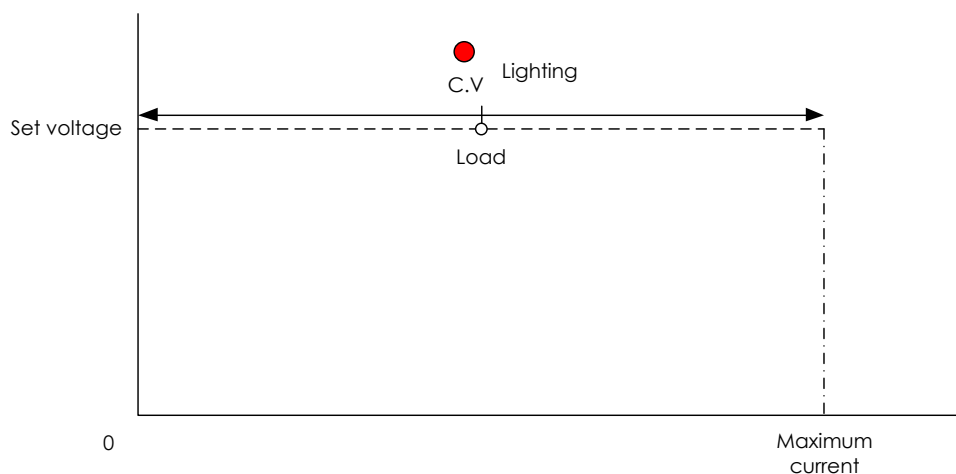
Also crossover function is activated with these controls. The crossover function is that the controlled type will be changed automatically depending on electrophoresis conditions and electrical load.

Principle

PowerStation III controls voltage, current and wattage of output while electrophoresing samples because electrical resistance of buffer liquid varies depending on its composition. Three type of control method which PowerStation III supports are described below.

With the C.V control

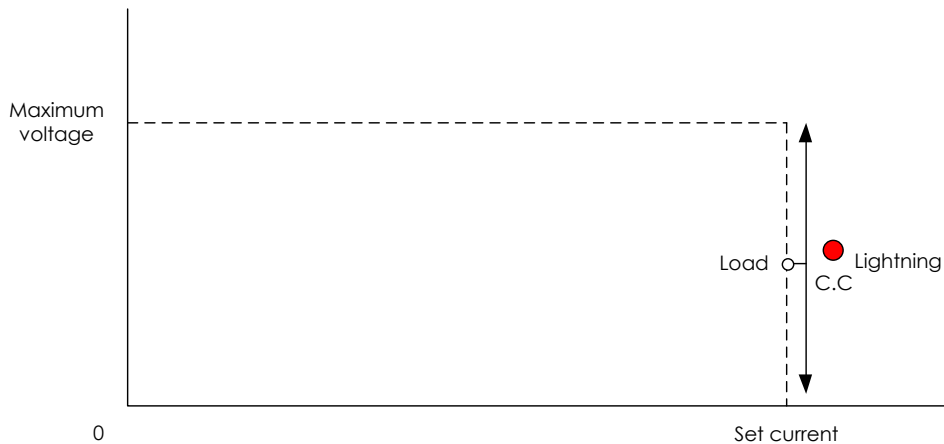
The C.V control keeps constant output of set voltage even if the load varies, when the load connected the set voltage does not exceed the maximum current (set current). The maximum current is limited by the maximum output power (200W) of power supply.



With the C.C control

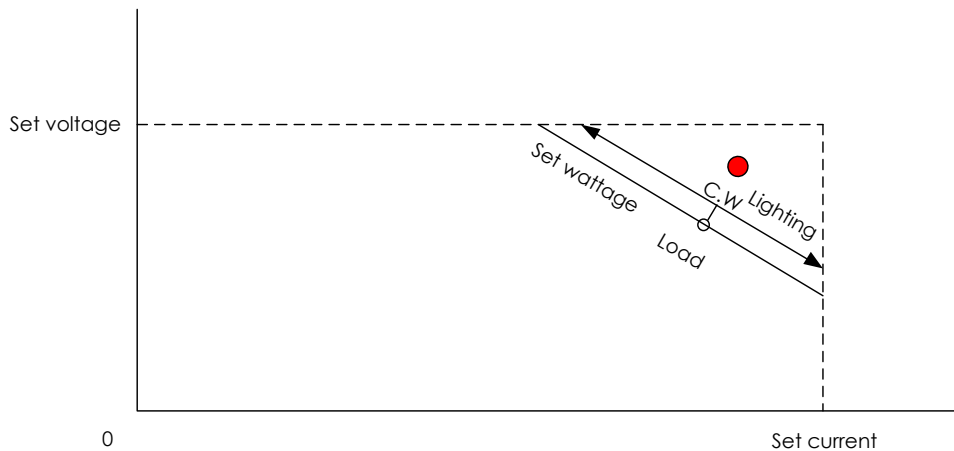
The C.C control keeps constant output of set current even if the load varies, when the load connected to the set current does not exceed the maximum voltage (set voltage). The minimum voltage is 10V.

3.7 Output control and crossover function



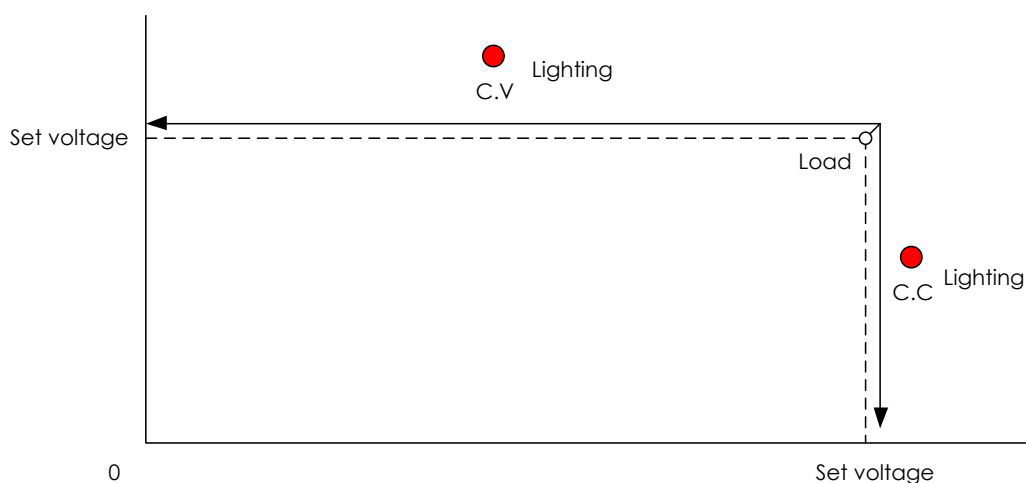
With C.W control

C.W control keeps constant output of the set power even if the load varies, when the load connected to a set power does not exceed the maximum power (200W). Power limitation comes into effect if power setting (W) becomes lower than Set Voltage [V] x (Set Current [mA] / 1000). If you want nullify power limitation, please set the value at the maximum (200W).



The crossover function

The crossover function refers to switching the corresponding function automatically if the load variation is large and the voltage and current are set at low values.

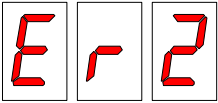
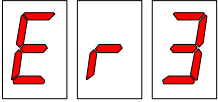
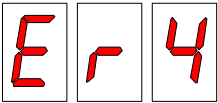
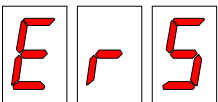
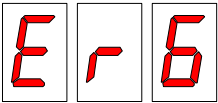
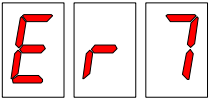


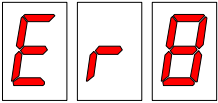
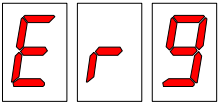
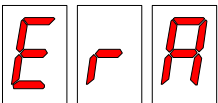
3.8. Error indicator

PowerStation III generates error signs and alarm sound if the main body detects abnormality and wrong setting.

	Parameter not entered yet.	Displayed on pressing the [RUN/STOP] button, even though parameters are not entered yet in the selected user mode or chain mode. Enter parameters completely.
	Short Circuit	Displayed when load short-circuit is detected when outputting. Turn off power switch. Please inspect and confirm whether short circuit exists in equipment connected or lead wire using a multimeter.
	Electric Leakage	Displayed when leaking exists at unit. This indicates the current flows to the ground from the connected power source. Turn off the power switch. Visually confirm whether any breakage exists with the power cord.

3.8 Error indicator

	Sudden Load Variation	Displayed when load suddenly varied. Turn off the power switch. Please inspect to see if wire disconnection in the connected equipment and lead wire, bad contact, lack of buffer liquid, etc. exists.
	Open Circuit	Displayed when open load is detected when outputting. This indicates high resistance. Turn off the power switch. Please inspect to see if wire disconnection in the connected equipment and lead wire, bad contact, lack of buffer liquid, etc. exists.
	Discharge (Arc)	Displayed when arc discharge occurs during output. This indicates a large current/voltage variation in a short time. Turn off the power switch. Please inspect to see if wire disconnection in the connected equipment and lead wire, bad contact, lack of buffer liquid, etc. exists.
	Power Failure (Auto recovery not possible)	Displayed when power failure occurs during output and automatic recovery is not possible. Turn off the power switch. Please inspect to see if voltage supplied to the unit is normal (100 to 240V).
	Insufficient Voltage Supply	Displayed when voltage supplied to the unit is less than 85V. Turn off the power switch. Please inspect to see if voltage supplied to the unit is normal (100 to 240V).
	Excessive Voltage Supply	Displayed when voltage supplied to the unit is more than 265V. Turn off the power switch. Please inspect to see if voltage supplied to the unit is normal (100 to 240V).

	Fan Trouble	Displayed when cooling fan at rear part of the unit has trouble. Turn off the power switch once. Turn on the switch again and confirm the fan actuation.
	Rising Temperature	Displayed when normal operation is not possible due to high temperature in the unit. Turn off the power switch. Turn on the switch again.
	Memory Trouble	Displayed when memory information in the unit crashes. Please contact us.

4. Preparation

This chapter describes preparation work before use.

4.1. Installation environment

The environment for using the unit is as follows:

Place of use	Indoor use only Location where direct sunlight is shut.
Temperature	0°C - +40°C
Humidity	20 - 90%RH, free from condensation



Warning

Never install the unit in the atmosphere of flammable gases. This can cause explosion or fire since the unit is not of an explosion-proof structure. Install the unit in the environment where no flammable gas is contactable.

Never install the unit in a corrosive gas atmosphere. This can cause conductor corrosion or bad connector contact in the product. This, in turn, may cause malfunction, trouble or fire.

Never install the unit in an environment where a lot of dust and dirt exist. Dust and dirt will stick to the unit and can cause electrical shock, fire or other problems.



Caution

Never use the unit in areas where strong magnetic or electric field exists or where a lot of waveform distortion or noise exists. These might cause malfunction.

Never install the unit where a direct sunlight hit, temperature suddenly varies or humidity is high. Never use it if condensation happens.

Please use the unit inside the room. This product has been designed to ensure safety and performance under the environment described in the Environment for Use.

4.2. Cable Connection

Power cable type

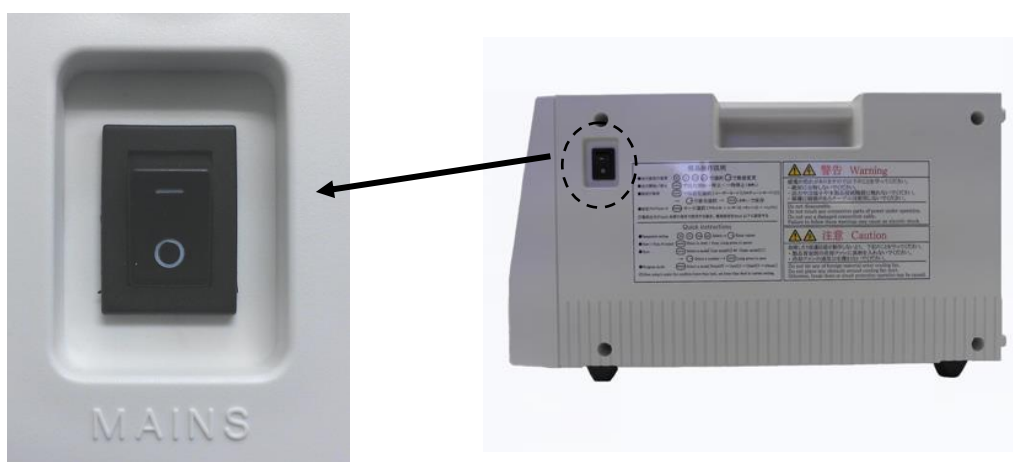
The cable attached to the product is the cable usable in Japan. Please prepare power cable that is applicable to the standard of the country where used.

The power connector of PowerStation III satisfies the following specification:

Standard	Shape
IEC 60320-C13, 250V, 10A	

Power cable connection

Please confirm the power switch at the right-hand side of the main body is OFF before connecting the cable. The sign [o] means OFF.



4.2 Cable Connection

Connect attached power cable to the power connector located on the back of PowerStation III. Connect power plug to power outlet that has the ground terminal.



Warning

Connect to power outlet with ground terminal.
Never use PowerStation III without ground connection. This can cause electrical shock and accident.

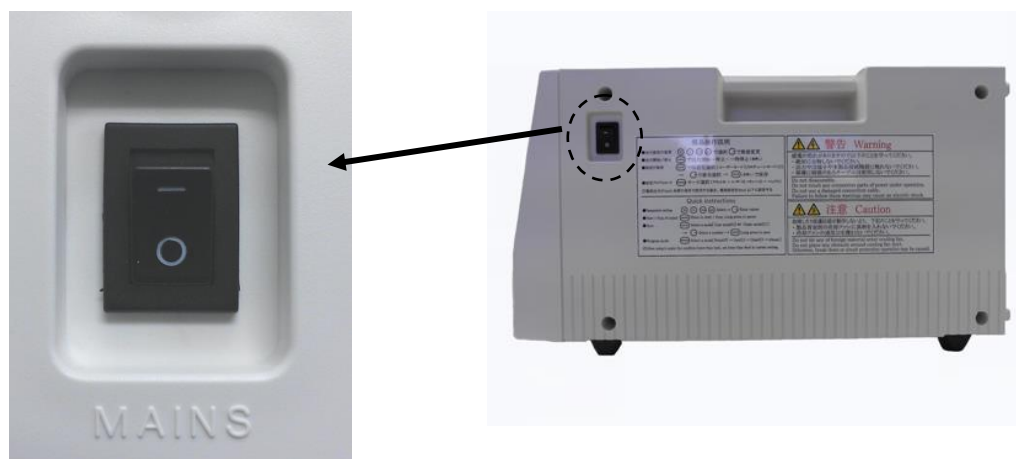


Caution

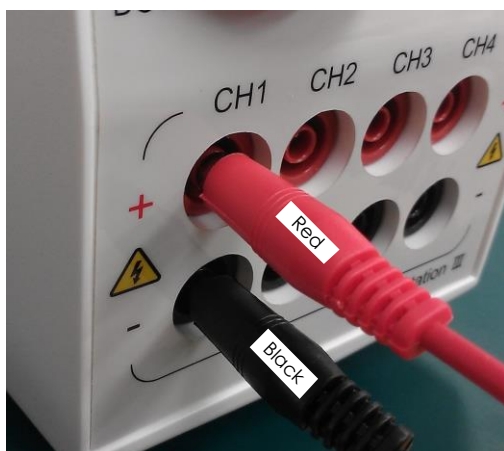
The power cable attached to PowerStation III is for Japanese domestic use. Please use the power cable applicable to the standard of the country where it is used.

Connection of electrophoresis power lead

Please confirm that the power switch at right-hand side of the main body is OFF before connecting the cable. When the circle [o] is pressed, that means OFF.



Connect the + (anode) side lead wire to the red terminal on the output terminal board located on the front side of PowerStation III and the - (cathode) side lead wire to the black terminal, respectively.



Warning

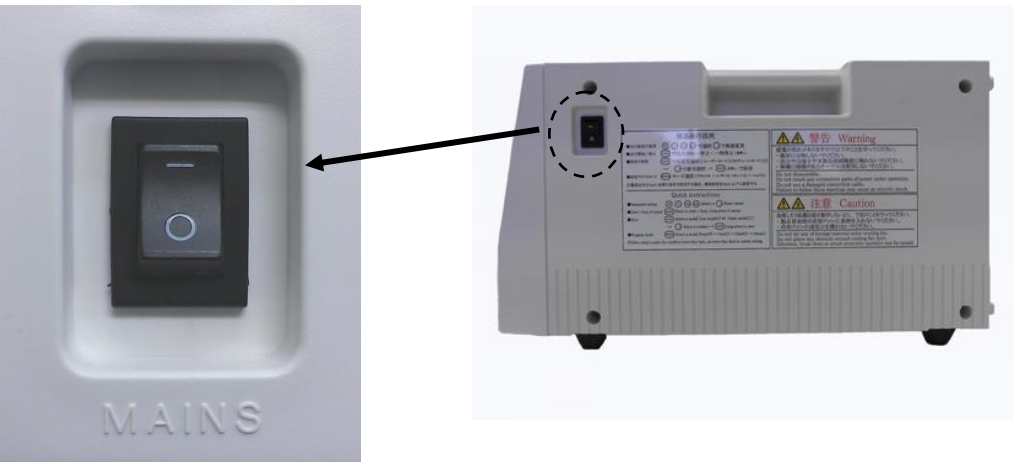
Never use lead wire having blemish on insulation. This can cause electrical shock and accident.

5. Operation

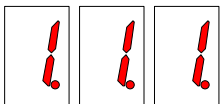
This chapter describes how to operate the unit.

5.1. Start up

Turn on the power switch located at the right-hand side of the main body. When [-] is pressed, that means ON.



The number display located on the front side of the main body lights up. Voltage value set when previously used is shown on the upper line of the number display. Current value set when previously used is shown on the lower line.

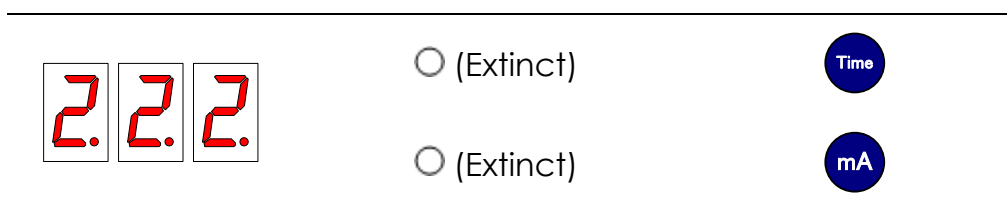


○ (Extinct)



○ (Extinct)





5.2. Selecting program mode

There are four (4) program modes for PowerStation III, as shown below:

Manual mode

User can set parameters freely using this mode.

Preset mode (for calling only)

Preset parameters suitable to ATTO electrophoresis products are saved in PowerStation III. The parameters for our products can be set easily by calling the memory number only using this mode.

User mode (save and calling)

User defined parameters in the manual mode can be saved in PowerStation III. Frequently used parameters can be set easily by calling the memory number using this mode.

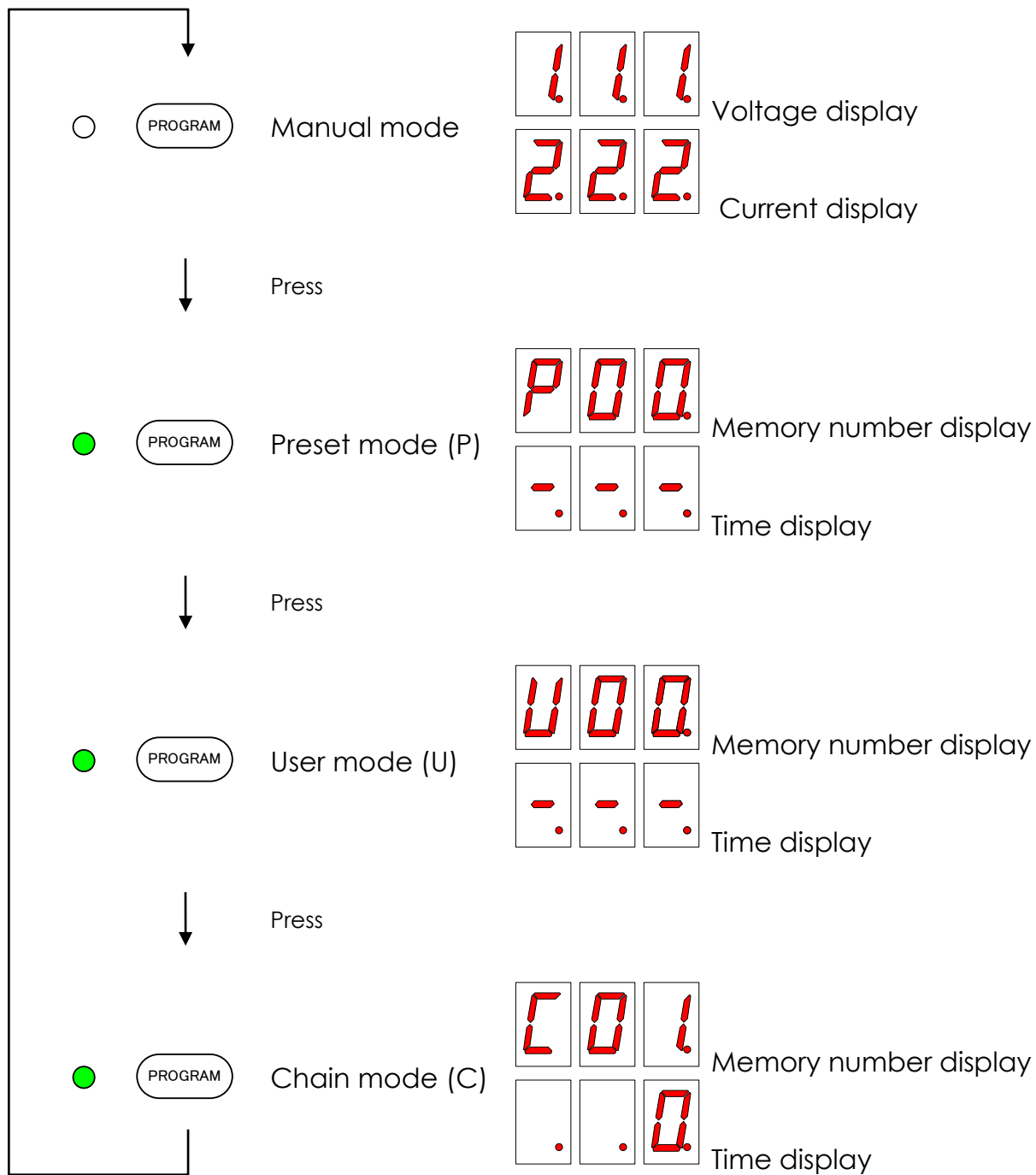
Chain mode (save and calling)

This mode is used if it is required to execute in sequence automatically by changing output settings.

How to select program mode

Select program mode by pressing [PROGRAM] button.

5.2 Selecting program mode



5.3. Manual mode

User uses this mode by setting voltage, current, wattage and time arbitrarily. How to use this mode is described below:

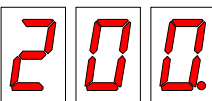
A) Constant current control

(1) To set wattage

Set wattage at the maximum value, 200 W.



1) Press [W] button.



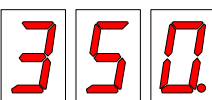
2) Select [200] by tuning dial (Unit: W)

(2) To set voltage

Set voltage at the required value.



1) Press [V] button



2) Select the required value by tuning dial. (Unit: V)



Voltage value differs depending on conditions such as buffer, gel, etc. Please refer to Parameter List, ATTO Product. [5.4 Preset Mode]
Example) Voltage is 350V in the case of SDS-PAGE buffer system using Mini-gel (80mm W x 90mm L x 1mm T) with constant 20mA.

(3) To set the timer

Set timer count at the required value.

When you do not use the timer, turn dial beyond 999 to display "--"

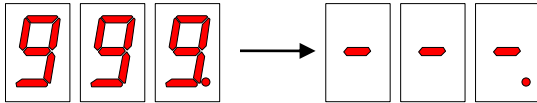
5.3 Manual mode



1) Press [Time] button



2) Select the required value by tuning dial. (unit: minute)



When you do not use the timer, turn dial beyond 999 to display "- - -"

(4) To set current

Set current at the required value.



1) Press [mA] button



2) Select the required value by tuning dial. (Unit: mA)

(5) Start output

Then, start output.



1) Pressing [RUN/STOP] button
Output status indicator lights up during output.

Indication during output

Actual output voltage and current are displayed during output by default.

Other values and settings can be displayed by the following steps.

Actual wattage and setting



1) Press [W] button during output.

- 2) Actual wattage is indicated only while the [W] button is pressed.

- 3) When [W] button is released, setting is indicated for 5 seconds.

- 4) Then actual output voltage is indicated.

Actual voltage and setting



- 1) Press [V] button during output

- 2) The setting is indicated while the [V] button is pressed and for 5 seconds after released.

- 3) Then actual output voltage is indicated.

Remaining time and setting



- 1) Press [Time] button during output.

- 2) Remaining time is indicated only while the [Time] button is being pressed.

- 3) When [Time] button is released, the setting is indicated for 5 seconds.

- 4) Then actual current is indicated.

Actual current and setting



- 1) Press [mA] button during output.

- 2) The setting is indicated while the [mA] button is being pressed and for 5 seconds after released.

- 3) Then actual current is indicated.

5.3 Manual mode

(6) Pause

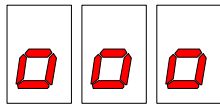
You can temporarily pause.



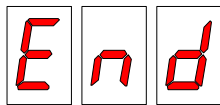
- 1) Press [RUN/STOP] button for more than two (2) seconds.
Output State LED flashes during pause.
- 2) When pressed once again, output resumes.

(7) Stop

When timer is ON, the run automatically stops after setting time has elapsed.



- 1) Number display indicates completion of the timer



When timer is OFF, the run stops manually.



- 1) Press [RUN/STOP] button.
Output state indicator is turned off.

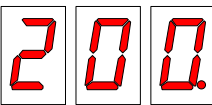
B) Constant voltage control

(1) To set wattage

Set wattage at the maximum value, 200W.



- 1) Press [W] button.



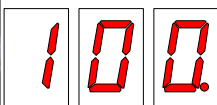
- 2) Select [200] by tuning dial (Unit: W).

(2) To set voltage

Set voltage at the required value.



1) Press [V] button.



2) Select the required value by tuning dial (Unit: V).

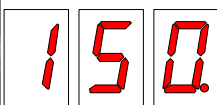
(3) To set the timer

Set timer count at the required value.

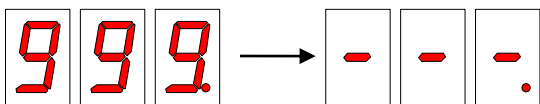
When you do not use the timer, turn dial beyond 999 to display "- - -".



1) Press [Time] button.



2) Select the required value by tuning dial (unit: minute).



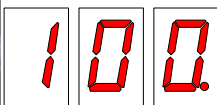
When you do not use the timer, turn dial beyond 999 to display "- - -"

(4) To set the current value

Set current at the required value.



1) Press [mA] button.



2) Transfer to required value by tuning dial (Unit: mA).

5.3 Manual mode



Current value differs depending on conditions such as buffer, gel, etc. Please refer to Parameter List (5.4 Preset Mode) of ATTO products.
Example) Current value is 100mA in the case of 1x TBE buffer system using 1 sheet of Agarose Gel (120mm W x 160mm L x 8mm T), with constant 100V.



In the case of isoelectric focusing electrophoresis (electrophoresis under the condition of actual current output less than 1mA):

Open circuit error "Er3" might occur by detecting high resistance due to low output current. First, please confirm that there is no abnormality in peripheral devices after connecting electrophoresis, gel, solution and lead wire, and also that your operation has been correct. And then, if you want to nullify error detection, please set the current value of isoelectric focusing electrophoresis at less than 9mA.

(5) Start output

Then, start output.



- 1) Pressing [RUN/STOP] button.
Output status indicator lights up during output.

Indication during output

Actual output voltage and current are displayed during output by default. Other values and settings can be displayed by the following steps.

Actual wattage and setting



- 1) Press [W] button during output.



- 2) Actual wattage is indicated only while the [W] button is pressed.

200

- 3) When [W] button is released, setting is indicated for 5 seconds.
-

100

- 4) Then actual output voltage is indicated.
-

Actual voltage and setting



- 1) Press [V] button during output

100

- 2) The setting is indicated while the [V] button is pressed and for 5 seconds after released.
-

100

- 3) Then actual output voltage is indicated.
-

Remaining time and setting



- 1) Press [Time] button during output.

149

- 2) Remaining time is indicated only while the [Time] button is being pressed.
-

150

- 3) When [Time] button is released, the setting is indicated for 5 seconds.
-

90

- 4) Then actual current is indicated.
-

Actual current and setting



- 1) Press [mA] button during output.

100

- 2) The setting is indicated while the [mA] button is being pressed and for 5 seconds after released.
-

90

- 3) Then actual current is indicated.
-

5.3 Manual mode

(6) Pause

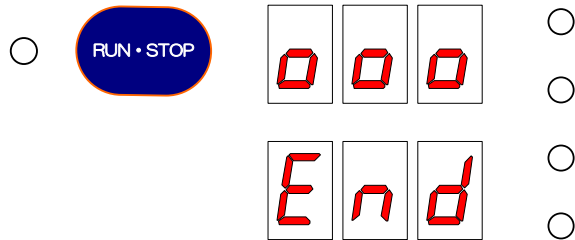
You can temporarily pause.



- 1) Press [RUN/STOP] button for more than two (2) seconds
Output state indicator flashes during pause.
- 2) When pressed once again, output resumes.

(7) Stop

When timer is ON, the run automatically stops after setting time has elapsed.



- 1) Number display indicates completion of the timer

When timer is OFF, the run stops manually.



- 1) Press [RUN/STOP] button.
Output state indicator is turned off.

C) Constant wattage control

(1) To set wattage

Set wattage at the required value.



- 1) Press [W] button.



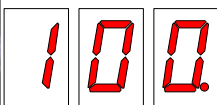
- 2) Select the required value by tuning dial (Unit: W).

(2) To set voltage

Set voltage at the required value.



1) Press [V] button.



2) Select the required value by tuning dial (Unit: V).



Voltage setting is calculated by the formula below:

$$\text{Voltage setting [V]} = \text{wattage setting [W]} / \text{current setting [A]}$$

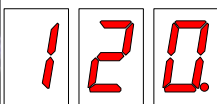
(3) To set the timer

Set timer count at the required value.

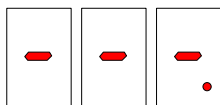
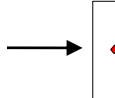
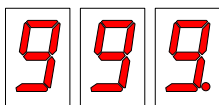
When you do not use the timer, turn dial beyond 999 to display “- - -”.



1) Press [Time] button.



2) Select the required value by tuning dial (unit: minute).



When you do not use the timer, turn dial beyond 999 to display “- - -”

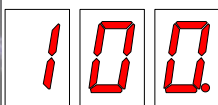
(4) To set the current value

Set current at the required value.



1) Press [mA] button.

5.3 Manual mode



2) Select the required value by tuning dial (Unit: mA).



Current value differs depending on conditions such as buffer, gel, etc. Please refer to Parameter List (5.4 Preset Mode) of ATTO products.

(5) Start output



1) Press [RUN/STOP] button.
Output status indicator lights up during output.

Indication during output

Actual output voltage and current are displayed during output by default. Other values and settings can be displayed by the following steps.

Actual wattage and setting



1) Press [W] button during output.



2) Actual wattage is indicated only while the [W] button is pressed.



3) When [W] button is released, setting is indicated for 5 seconds.



4) Then actual output voltage is indicated.

Actual voltage and setting



1) Press [V] button during output



2) The setting is indicated while the [V] button is pressed and for 5 seconds after released.



- 3) Then actual output voltage is indicated.
-

Remaining time and setting



- 1) Press [Time] button during output.



- 2) Remaining time is indicated only while the [Time] button is being pressed.
-



- 3) When [Time] button is released, the setting is indicated for 5 seconds.
-



- 4) Then actual current is indicated.
-

Actual current and setting



- 1) Press [mA] button during output.



- 2) The setting is indicated while the [mA] button is being pressed and for 5 seconds after released.
-



- 3) Then actual current is indicated.
-

(6) Pause

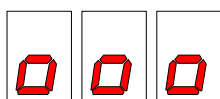
You can temporarily pause.



- 1) Press [RUN/STOP] button for more than two (2) seconds
Output state indicator flashes during pause.
- 2) When pressed once again, output resumes.

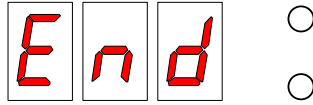
(7) Stop

When timer is ON, the run automatically stops after setting time has elapsed.



- 1) Number display indicates completion of the timer
-

5.4 Preset mode



When timer is OFF, the run stops manually.

-  1) Press [RUN/STOP] button.
Output state indicator is turned off.

5.4. Preset mode

How to use preset mode is described below.

(1) Select preset mode

Select preset mode.

-   1) Press [PROGRAM] button

(2) Select memory number

Select memory number you use.



- 1) Select the required memory number by tuning dial.



Each parameter can be changed with [W] / [V] / [mA] / [Time] buttons. When parameter is changed, mode goes to manual mode automatically. However, the change cannot be saved in preset mode. Please save parameter in the memory number of user mode. (Refer to 5.7 Save into Memory)

Preset mode parameter list is shown below:

No.	Model	Product	Experiment	Condition	Setting	Voltage [V]	Current [mA]	Wattage [W]	Time [min.]
P00	-	-	-	-	-	-	-	-	-
P01	AE-6500/6530	miniPAGE	PAGE	C.C.	20mA / 1pc mini-gel	350	20	7	80
P02	AE-6500/6530	miniPAGE	PAGE	C.C.	20mA / 2pcs mini-gel	350	40	14	80
P03	AE-6687	HorizeBLOT 2M	semi-dry blotting	C.C.	2mA / cm ² , 1pc mini-gel	40	144	6	60
P04	AE-6687	HorizeBLOT 2M	semi-dry blotting	C.C.	2mA / cm ² , 2pcs mini-gel	40	288	6	60
P05	AE-6687	HorizeBLOT 2M	semi-dry blotting	C.C.	2mA / cm ² , 1pc compact-gel	40	72	3	60
P06	AE-6687	HorizeBLOT 2M	semi-dry blotting	C.C.	2mA / cm ² , 2pcs compact-gel	40	144	6	60
P07	AE-6687	HorizeBLOT 2M	semi-dry blotting	C.C.	2mA / cm ² , 3pcs compact-gel	40	216	9	60
P08	AE-6688	HorizeBLOT 4M	semi-dry blotting	C.C.	2mA / cm ² , 1pc mini-gel	40	144	6	60
P09	AE-6688	HorizeBLOT 4M	semi-dry blotting	C.C.	2mA / cm ² , 2pcs mini-gel	40	288	12	60
P10	AE-6688	HorizeBLOT 4M	semi-dry blotting	C.C.	2mA / cm ² , 3pcs mini-gel	40	432	18	60
P11	AE-6688	HorizeBLOT 4M	semi-dry blotting	C.C.	2mA / cm ² , 1pc slab-gel	40	338	14	60
P12	AE-7340	Compact PAGE	PAGE	C.C.	21mA / 1pc compact-gel	250	21	6	30
P13	AE-7340	Compact PAGE	PAGE	C.C.	21mA / 2pcs compact-gel	250	42	11	30
P14	AE-6200	Slab	PAGE	C.C.	30mA / 1pc slab-gel	400	30	12	150
P15	AE-6220	Dual Slab	PAGE	C.C.	30mA / 1pc slab-gel	400	30	12	150
P16	AE-6220	Dual Slab	PAGE	C.C.	30mA / 2pcs slab-gel	400	60	24	150
P17	AE-6540	Mini size agarGEL	isoelectric focusing	C.V.	300V	300	9	5	210
P18	AE-6540	Compact size agarGEL	isoelectric focusing	C.V.	300V	300	9	5	150
P19	AE-6100	Submerged	agarose gel electrophoresis	C.V.	100V	100	80	8	70
P20	AE-6111	Submerged	agarose gel electrophoresis	C.V.	100V	100	100	10	150
P21	AE-6125	Submerged	agarose gel electrophoresis	C.V.	160V	160	120	19	180
P22	AE-6133	Submerged	agarose gel electrophoresis	C.V.	150V	150	160	24	120
P23	AE-6135	Submerged	agarose gel electrophoresis	C.V.	100V	100	160	16	150
P24	-	-	-	-	-	-	-	-	-
...	-	-	-	-	-	-	-	-	-
P31	-	-	-	-	-	-	-	-	-

5.4 Preset mode

(3) Start output

Start output.



- 1) Press [RUN/STOP] button to start output.
Output status indicator lights during output.

Indication during output

Actual output voltage and current are displayed during output by default. Other values and settings can be displayed by the following steps.

Actual wattage and setting



- 1) Press [W] button during output.



- 2) Actual wattage is indicated only while the [W] button is pressed.



- 3) When [W] button is released, setting is indicated for 5 seconds.

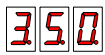


- 4) Then actual output voltage is indicated.

Actual voltage and setting



- 1) Press [V] button during output



- 2) The setting is indicated while the [V] button is pressed and for 5 seconds after released.



- 3) Then actual output voltage is indicated.

Remaining time and setting



- 1) Press [Time] button during output.



- 2) Remaining time is indicated only while the [Time] button is being pressed.



- 3) When [Time] button is released, the setting is indicated for 5 seconds.



- 4) Then actual current is indicated.

Actual current and setting



- 1) Press [mA] button during output.



- 2) The setting is indicated while the [mA] button is being pressed and for 5 seconds after released.



- 3) Then actual current is indicated.

Selected memory number



- 1) Press [PROGRAM] button during output.



- 2) Memory number is displayed while [PROGRAM] button is being pressed and for 5 seconds after released.



- 3) Then actual current is indicated.

(4) Pause

You can temporarily pause.

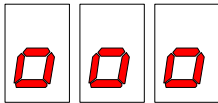
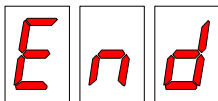


- 1) Press [RUN/STOP] button for more than two (2) seconds
Output state indicator flashes during pause.
- 2) When pressed once again, output resumes.

5.5 User mode

(5) Stop

When timer is ON, the run automatically stops after setting time has elapsed.

-
- | | | | | |
|-----------------------|---|---|-----------------------|---|
| ☐ |  |  | ☐ | 1) Number display indicates completion of the timer |
| | | | ☐ | |
| | |  | ☐ | |
| | | | ☐ | |
-

When timer is OFF, the run stops manually.

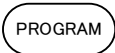
-
- | | | |
|-----------------------|---|--|
| ☐ |  | 1) Press [RUN/STOP] button.
Output state indicator is turned off. |
|-----------------------|---|--|
-

5.5. User mode

How to use user mode is described below.

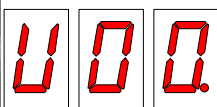
(1) Select user mode

Select user mode.

-
- | | | |
|----------------------------------|---|----------------------------|
| ☒ |  | 1) Press [PROGRAM] button. |
|----------------------------------|---|----------------------------|
-

(2) Select memory number

Select memory number you use.



1) Select the required memory number by tuning dial.



Each parameter can be changed with [W] / [V] / [mA] / [Time] buttons and dial. When parameter is changed, mode goes to manual mode automatically.

(3) Start output

Start output.



1) Press [RUN/STOP] button to start output.
Output status indicator lights during output.

Indication during output

Actual output voltage and current are displayed during output by default. Other values and settings can be displayed by the following steps.

Actual wattage and setting



1) Press [W] button during output.



2) Actual wattage is indicated only while the [W] button is pressed.



3) When [W] button is released, setting is indicated for 5 seconds.



4) Then actual output voltage is indicated.

Actual voltage and setting



1) Press [V] button during output

5.5 User mode

350

- 2) The setting is indicated while the [V] button is pressed and for 5 seconds after released.

340

- 3) Then actual output voltage is indicated.

Remaining time and setting



- 1) Press [Time] button during output.

79

- 2) Remaining time is indicated only while the [Time] button is being pressed.

.80

- 3) When [Time] button is released, the setting is indicated for 5 seconds.

20

- 4) Then actual current is indicated.

Actual current and setting



- 1) Press [mA] button during output.

.20

- 2) The setting is indicated while the [mA] button is being pressed and for 5 seconds after released.

18

- 3) Then actual current is indicated.

Selected memory number



- 1) Press [PROGRAM] button during output.

P01

- 2) Memory number is displayed while [PROGRAM] button is being pressed and for 5 seconds after released.

18

- 3) Then actual current is indicated.

(4) Pause

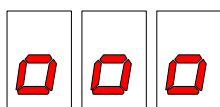
You can temporarily pause.



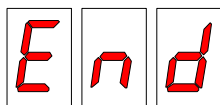
- 1) Press [RUN/STOP] button for more than two (2) seconds.
- 2) Output state indicator flashes during pause.
- 3) When pressed once again, output resumes.

(5) Stop

When timer is ON, the run automatically stops after setting time has elapsed.



- ☐
- 1) Number display indicates completion of the timer



- ☐
-
- ☐
-
- ☐

When timer is OFF, the run stops manually.



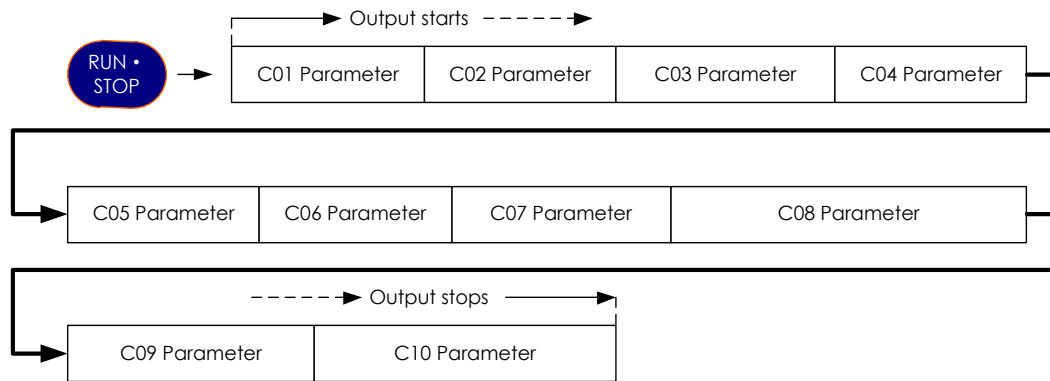
- 1) Press [RUN/STOP] button.
Output state indicator is turned off.

5.6. Chain mode

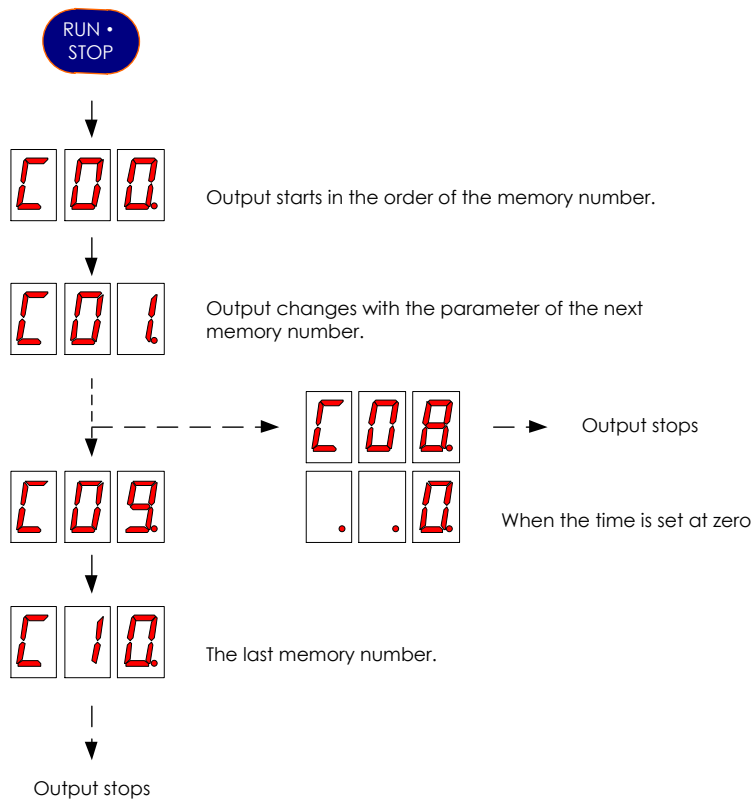
Chain Mode is used if it is required to execute in sequence automatically by changing output setting.

Operation sequence in chain mode is shown below.

5.6 Chain mode



Output is defined to stop at the specified memory number where the timer is set at zero.



(1) Select chain mode

Select chain mode.

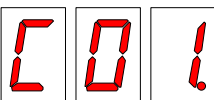


PROGRAM

1) Press [PROGRAM] button

(2) Select memory number

Select memory number you use.



1) Select the required memory number by tuning dial.



Each parameter can be changed using [W] / [V] / [mA] / [Time] buttons and dial. When parameter is changed, mode goes to manual mode automatically.

(3) Start output

Start output



RUN • STOP

1) Press [RUN/STOP] button to start output.
Output status indicator lights during output.

Indication during output

Actual output voltage and current are displayed during output by default. Other values and settings can be displayed by the following steps.

Actual wattage and setting



1) Press [W] button during output.



2) Actual wattage is indicated only while the [W] button is pressed.



3) When [W] button is released, setting is indicated for 5 seconds.

5.6 Chain mode

350

- 4) Then actual output voltage is indicated.



Actual voltage and setting



- 1) Press [V] button during output

350

- 2) The setting is indicated while the [V] button is pressed and for 5 seconds after released.



340

- 3) Then actual output voltage is indicated.



Remaining time and setting



- 1) Press [Time] button during output.

79

- 2) Remaining time is indicated only while the [Time] button is being pressed.



.80

- 3) When [Time] button is released, the setting is indicated for 5 seconds.



20

- 4) Then actual current is indicated.



Actual current and setting



- 1) Press [mA] button during output.

.20

- 2) The setting is indicated while the [mA] button is being pressed and for 5 seconds after released.



18

- 3) Then actual current is indicated.



Selected memory number



- 1) Press [PROGRAM] button during output.



- 2) Memory number is displayed while [PROGRAM] button is being pressed and for 5 seconds after released.



- 3) Then actual current is indicated.

(4) Pause

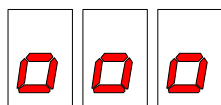
You can temporarily pause.



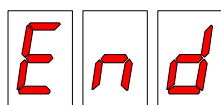
- 1) Press [RUN/STOP] button for more than two (2) seconds
Output state indicator flashes during pause.
- 2) When pressed once again, output resumes.

(5) Stop

When timer is ON, the run automatically stops after setting time has elapsed.



- 1) Number display indicates completion of the timer



-
-

When timer is OFF, the run stops manually.



- 1) Press [RUN/STOP] button.
Output state indicator is turned off.

5.7. Saving into memory

Parameters selected in manual mode can be saved into the internal memory. Memory number is selected in user mode or chain mode.

5.7 Saving into memory

A) In user mode



- 1) Press [SAVE] button after setting parameter in either manual mode or preset mode.



- 2) Select memory number of the destination for saving by turning dial.

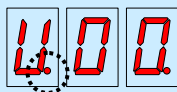


(Press more than 2 seconds)

- 3) Press [SAVE] button for more than 2 seconds.



A dot [.] is attached to the initial character of the memory number in use.



B) In chain mode



(2 times)

- 1) Press [SAVE] button 2 times after setting parameter in manual mode or preset mode.



- 2) Select memory number of the destination for saving by turning dial.

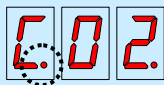


(Press more than 2 seconds)

- 3) Press [SAVE] button for more than 2 seconds.

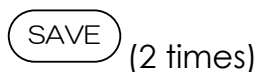


A dot [.] is attached to the initial character of the memory number in use.



C) To delete the parameter in chain mode memory

By deleting the parameter in the specified chain mode memory number, automatic execution stops at the cleared memory number.



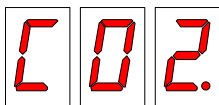
1) Press [SAVE] button 2 times after setting parameter.



2) On turning dial, select memory number which you want to clear.



3) While pressing [SAVE] button, press [Time] button at the same time.



4) Parameter of the selected memory number will be cleared.

6. Troubleshooting

This chapter explains about trouble shooting.

If you are unable to solve the problem, please contact us upon confirming your model and serial numbers listed on the rear side panel. (Refer to the end of Manual for enquiry.)

6.1. PowerStation III doesn't work

Please confirm the following:

- Please confirm visually that the main body and outlet are properly connected with power cable, and plugged completely.
- Please get the fuse out from the fuse holder on the rear surface of the unit and visually confirm that the fuse is not blown. If the fuse is blown, please contact us. (Refer to the end of Manual for enquiry.)

	1) Insert a flat-head screwdriver in the concave of power connector inlet (white circles on the left) located on rear side of main body, and turn it CCW. (2 places)
---	---



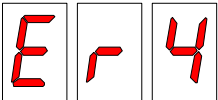
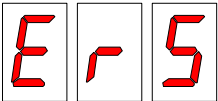
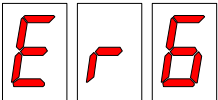
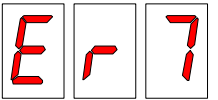
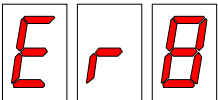
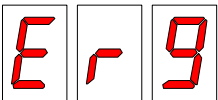
- 2) Confirm the fuse installed on the fuse holder. If the fuse is blown, replace it and equip the fuse holder into inlet.

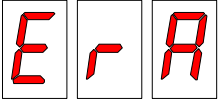
Fuse Specification: 5.2Ø x 20mm, 250V-5A Slow-Blow Type, 2 pieces

6.2. Error Indication

	Parameter not yet entered	Displayed on pressing the [RUN/STOP] button, even though parameters are not entered yet in the selected user mode or chain mode. Enter parameters completely.
	Short circuit	Displayed when a load short-circuits during output is detected. Turn off power switch. Inspect to see whether short circuit has occurred in the equipment connected or the lead wire, using a multi-meter.
	Leakage	Displayed when leakage occurs in unit. This indicates that current has flowed into ground from power source connected. Turn off the power switch. Visually inspect to see if any breakage exists with power cord.
	Sudden load variation	Displayed when load suddenly varies. Turn off the power switch. Inspect to see whether wire disconnection or bad contact exists in equipment connected or lead wire or buffer liquid is insufficient.
	Open circuit	Displayed when open load is detected during output. This indicates high resistance.

6.2 Error Indication

		Turn off the power switch. Inspect to see whether wire disconnection or bad contact exists in equipment connected or lead wire or buffer liquid is insufficient.
	Arc discharge	Displayed when arc discharge occurs during output. This indicates a large variation of current/voltage within a short period of time. Turn off the power switch. Inspect to see whether wire disconnection or bad contact exists in equipment connected or lead wire or buffer liquid is insufficient.
	Power Failure (Auto recovery unavailable)	Displayed when power failure happens during output and won't recover. Turn off the power switch. Inspect and confirm whether supply voltage to the unit is normal (100 - 240V).
	Insufficient supply voltage	Displayed when supply voltage to the unit is less than 85V. Turn off the power switch. Inspect and confirm whether supply voltage to the unit is normal (100 - 240V).
	Excessive supply voltage	Displayed when supply voltage to the unit is more than 265V. Turn off the power switch. Inspect and confirm whether supply voltage to the unit is normal (100 - 240V).
	Fan trouble	Displayed when cooling fan at rear part of unit has trouble. Turn off the power switch. Turn on the switch again and check if the fan runs.
	Temperature rise	Displayed when normal operation is not possible due to temperature rise in the unit. Turn off the power switch. Turn on the switch again.

	Memory trouble	Displayed when memory information in the unit crashes. Please contact us.
---	----------------	--

Error Confirmation and Release

To release the [Err] sign

Error is released when appropriate parameters are set. (Refer to 5. Operation)

To release the [Er0] - [Er9] and [ErA] signs:

Please turn off power switch after confirming error indication number. And then please take appropriate action, referring to the list on the previous page.

Do NOT turn power switch ON until the cause of the error is resolved.

If you cannot inspect or confirm the error cause, or if the error continues to show, then please stop using the unit and inform us. (Refer to the end of the Manual for enquiry.)

7. Maintenance

This chapter describes maintenance, inspection and cleaning, and countermeasures against unit malfunction.

7.1. Cleaning



Warning

Please clean the main body after turning off the power switch and pulling out the power cable.

Main body

Outer surface

When outer surface is dirty, please wipe it with a lint-free cloth dipped in thinned neutral detergent.

Vent Hole

When dust and dirt are attached to the vent hole, please remove them using a vacuum cleaner.

Accessories

Power Cable

Please make sure that there is no blemish on power cable.

7.2. Inspection

By doing periodical inspection, failures and accidents can be prevented before happens, and the unit can be used safely. Though it depends on usage

frequency and amount of time used, we strongly recommend periodical inspection so as to maintain the unit's good performance. Please contact us for inspection work.

Please refer to the end of Manual for enquiry details.

7.3. Maintenance and Repair

Our products come with a repair service period of 7 years from the date of delivery. Therefore, if you wish to have your product repaired, you will need to request it within this period. However, please note that we generally do not accept repair requests for products that have been in use for more than 7 years.

Furthermore, we store parts for discontinued products for a duration of 7 years after production has ceased. Please be aware that even within the repair service period, there may be cases where repair is not possible due to a lack of available parts.

We have full confidence in the quality of our products and provide them to our customers with the assurance that they can use them with peace of mind. However, depending on the usage environment and methods of use, malfunctions or defects may occur. In such cases, we recommend that you request repairs within the repair service period.

If any abnormality or failure occurs while using the unit according to this instruction manual, or if you notice any problem during your maintenance/inspection work, please contact us after checking it according to the relevant [Trouble Shooting] item.

When repair is required, please send the unit back to our Technical Service Group, in principle. If on-site repair is requested, travel expense will be required in addition to the repair cost.

Please refer to the end of Manual for enquiry details.

7.4. Warranty

Our warranty

ATTO Corporation warrants all its products subject to the terms and conditions set forth below.

1. This warranty covers all new products that are sold by ATTO Corporation (hereinafter called ATTO).
2. Expendable items are not covered by this agreement.
3. Claims under this warranty are limited to defects in material and workmanship of the products.
4. Malfunction and/or damage due to neglect, abuse, operation or repair contrary to specifications and/or instructions presented by ATTO are not warranted.
5. ATTO shall not be liable to consequential damage, labor, loss or expense directly or indirectly arising from use of the products.
6. Damage due to transit is not covered by this warranty.
7. The warranty period is one (1) calendar year from a date when the products are shipped from ATTO to an original purchaser.
8. This warranty is not applied to any defect that is reported to ATTO later than one (1) calendar month from a date of warranty termination.
9. ATTO Shall supply parts to replace faulty parts of defective products under this warranty, free of charge.
10. ATTO shall repair defective products under this warranty, which cannot be repaired at field, free of charge.
11. ATTO shall replace defective products under this warranty, which cannot be repaired, free of charge.

12. Freight charges for return and replacement shipments under this warranty are shared by ATTO and a purchaser, that is one way by either party and another way by another party.
13. Warranty period of repaired products and replacement products or parts is three (3) calendar months from a date when the said products or parts are shipped from ATTO, or a remaining term of an original warranty period of the defective products, whichever lasts longer.
14. Return of the products for credit or refund is not accepted unless otherwise agreed in writing by ATTO.

8. Specifications

This chapter describes unit specifications.

8.1. Specifications

WSE-3200 PowerStation III				
Output Voltage		0 - 1,000V	(Indication 1,000 = Full)	(200W, Max)
Output Current		0 - 500mA	(Indication 0 <)	(200W, Max)
Output Wattage		0 - 200W	(Indication 0 <)	
Set Voltage		10 - 1,000V	1V step	
Set Current		1 - 500mA	1mA step	
Set Wattage		1 - 200W	1W step	
Output Terminal		4 group parallel output		
Timer		1 - 999 min, continuous 1 min step Count down		
Control Function		Constant Voltage/Current/Wattage		Crossover
Controller	Display	7-segment LED, 3-Digit, 2-Columns		
	Setting	Dial		
	External Control	NA		
Alarm Output		Electronic Buzzer When key input/error occurs: once; When time is over: 5 times		
Output Accuracy	Voltage	For Set Value	Less than 10V - 50V	± 1.5V
		For Set Value	51V - 150V	± 3% + 5 digits
		For Set Value	151V - 1,000V	± 2% + 5 digits

Indication Accuracy: Voltage	Indicated Value $\pm$ (0.2% of rdg + 5 digits)	
Current	Indicated Value $\pm$ (0.5% of rdg + 5 digits)	
Wattage	Indicated Value $\pm$ (0.5% of rdg + 5 digits)	
Condition Storing: Preset	23 files, P01 - P23	
	21 files, U00 - U20	
Free	10 files, C01 - C10 (Chain File)	
Safety Functions:		
Output Short Detection	Short Current	Er0
Leak Detection	Leak Current to ground	Er1
Open Detection	Load Open	Er3
Arc Detection	Arc Discharge	Er4
Input HV Detection	Input Voltage above 265V	Er7
Fan Stop Detection	Fan Failure	Er8
Internal Temp. Detection	Unit Internal Temperature Rising	Er9
Countermeasure for Power Failure	After the power is restored, the unit automatically recovers back to the state before the power failure.	
Cooling Method	Forced Air Cooling by Built-in Fan	
Environment for Use Ambient Temp. for Operation	0°C - +40°C	
Humidity for Operation	20 - 90% RH, no condensation	
Input Voltage	85 - 264V, AC	
Frequency	47 - 66Hz	
Power Consumption	300W, Max.	
Safety Standard	Pursuant to Electrical Appliance and Material Safety Law	
Material	Case: ABS	
Dimensions	96 (W) x 325 (D) x 195 (H) mm	
Weight	2.2Kg, Max.	





ATTO Corporation

Head Office:

3-2-2 Motoasakusa, Taito-ku, Tokyo
111-0041, JAPAN

TEL: +81-3-5827-6863

FAX: +81-3-5827-6647

E-mail: eig@atto.co.jp

Website: <http://www.atto.co.jp/eng/>
