DC Plater Rectifier

POWER SUPPLY

270.60A & 270.60N

OPERATION MANUAL

Table of Contents

TECHNICAL PRODUCT SPECIFICATION

Specification	Rating/Description	Condition
INPUT		
AC Voltage nominal	110VAC / 220VAC; 50/60Hz	Auto switch range
AC voltage range	105-132VAC / 200-248VAC; 50/60Hz	
Efficiency	>=88%	@ full power
Adjustable voltage stabilization mode		
Output	Umax = 18VDC Imax = 80A Pmax = 950W(Power limited)	
Output Voltage Accuracy	<= 0.2%	
Output Voltage Adjustment Resolution (step)	10mV	
Output Voltage Ripple and Noise (under maximum load)	<= 1%	
Instability of Output Terminal Voltage (depends on time and external factors)	<= 1%	
Adjustable load current stabilization mode		
Load Current Adjustment	0.35-80A	
Load Current Accuracy	<= 1%	
Load Current Adjustment Resolution (step)	10mA	
Load Current Ripple and Noise (under maximum load)	<= 1%	
Instability of Load Current (depends on time and external factors)	<= 1%	
Time Adjustment		
Maximum Time	Up-to 9hrs 59min	
Adjustment Precision	1sec.	
Pulse voltage mode		
Positive / Negative Pulse Duration	0.1 - 90min	
Adjustment Precision	1sec.	
Protection		
Heat sink over temperature protection	60˚C	

Specification	Rating/Description	Condition
MISCELLANEOUS		
Operating Temperature	+5ºC ÷ +40ºC	
Storage Temperature	-20ºC ÷ +65ºC	
Humidity Range	0 ÷ 95%	RH Non-condensing Operating & Storage
Dimensions	240x385x125mm	
Weight	6.1kg	
Cooling	Forced Air Cooling	

1 GETTING STARTED GUIDE

1.1 SAFETY

1.1.1 IMPORTANT NOTES

This manual is valid only for the Model and the associated Revision number(s) specified in the cover sheet of this manual. A Change Page may be included at the end of the manual. All applicable changes are documented with reference to the equipment Revision and Serial number. Before using this Instruction Manual, check your equipment nameplate to identify your Model and Revision number. If in doubt, contact your nearest PepeTools technical support representative.

Data subject to change without notice.

All Information contained in this manual is the latest information available at the time of printing. The right is reserved to make changes at any time without notice. PepeTools makes no warranty of any kind with regard to this material and assumes no responsibility for any errors that may occur in this manual.

Safety First!

YOU, AND NOT THIS MANUAL ARE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS

This manual is for reference purposes only. Personnel should be trained on proper operation of this equipment before using it. Only authorized personnel may perform any troubleshooting or repair on any PepeTools manufactured equipment. Failure to comply will void warranty.

Please, contact the PepeTools Support Team before servicing any PepeTools equipment.

Lethal voltages may be present in equipment surrounding and/or connected to this equipment.

Read the following warnings carefully and study this entire manual before operating the system. Failure to observe warnings may result in equipment damage, serious personal injury, or death.

- ✓ If the equipment is used in a manner not specified by this manual, the protection provided by the equipment may be compromised and damage to the unit may occur.
- ✓ Only qualified personnel who have been trained in the operation of this equipment and are familiar with the technology should be permitted to operate the system.
- ✓ Installation, assembly, inspection maintenance and servicing are to be performed by authorized personnel only.
- ✓ Always have the Power Supply completely powered OFF and locked out before performing any service, inspection, or maintenance.
- ✓ Even with the Power Supply OFF, line voltages still exist within the machine's cabinet. Always power OFF and lock out the external power source to ensure no one can accidentally energize the Power Supply.
- ✓ Ensure that all external wiring conforms to all applicable codes.
- ✓ Obey all warnings and use good common sense.

1.2 SAFETY INSTRUCTIONS

- ✓ Do not expose the DC Plater power supply (PS) to rain or moister.
- ✓ Do not disassemble the device.
- ✓ Do not jerk the power cord.
- ✓ Do not block the ventilation holes. Place the PS at least 10 cm away from the walls for good air circulation.
- ✓ Do not stand and place heavy objects on the PC. Use PC in flat stable position only.
- ✓ When the PS is not used for an extended period of time, disconnect the AC cord.
- ✓ Never use the machine if you have not carefully read and entirely understood this manual in all its parts.

1.3 INSTALLATION AND STARTUP

1.3.1 INSTALLATION PROCEDURE

The installation procedure consists of the following steps:

- ✓ Selecting the site where the equipment will be used:
- ✓ Unpacking and inspecting the equipment;
- ✓ Connecting the accessories or interfacing the system with other additions (if necessary);
- ✓ Connecting The Plater to the unit power outputs.

This is a class A product. in a residential, COMMERCIAL OR LIGHT INDUSTRIAL ENVIRONMENT, it may cause radio interference. This product is not intended to be installed in a residential environment; in a commercial and light industrial enviroment where a connection to the public mains is present, THE user may be required to take adequate measures to reduce interference.

NOTE: PepeTools has a field engineering team at its disposal who are available to supervise the installation of the equipment. If commissioning service is required, contact our Technical Support Team for additional information.

1.3.2 UNPACKING AND INSPECTION

This equipment has been thoroughly inspected and tested prior to packing and is ready for operation. After careful unpacking, visually inspect for shipping damage **BEFORE** attempting to operate the equipment. If any indication of damage is found, file an immediate claim with the responsible transport service and contact your sales representative.

Inspect equipment before installing. Damaged equipment may result in improper operation and/or create a hazardous condition which may lead to personal injury or death.

The forwarder is responsible for all damage caused in shipment including any concealed damage.

1.4 MAINTENANCE

1.4.1 SCHEDULING

The Power Supply is designed for continuous service and minimum maintenance requirements. The frequency of any maintenance program is a function of the environment, the degree of equipment uses, and the product experience.

1.4.2 PERSONNEL

Only Qualified personnel may perform the inspection and maintenance procedures. The Qualified Personnel must read and be thoroughly familiar with all safety precautions discussed in this manual.

1.4.3 INSPECTION AND MAINTENANCE PROCEDURE

Note: Always follow approved lock - out / tag - out procedures before performing any service, inspection or maintenance.

The following describes inspection procedures to be performed on a daily, weekly, and monthly basis.

Daily/Weekly Inspection:

It is good practice to do a quick visual inspection of the unit, wiring and connections on a daily and/or weekly basis. Report any apparent changes in performance to responsible personnel so that potential problems can be investigated.

Monthly Inspection:

Perform the following monthly:

- ✓ Ensure all wiring connections are secure. Visually inspect for any wear on cabling.
- ✓ Verify that none of the enclosure's hardware has become loose.
- ✓ Remove any build-up debris that may occur around the fan inlet using a cloth or a vacuum cleaner. Use of compressed air is not recommended.
- ✓ Wipe the Control Panel with a damp cloth to remove any dirt, prints or smudges.
- ✓ Wipe the enclosure down with a damp cloth or paint friendly cleaner.

2 PRODUCT SPECIFICATIONS AND FEATURES

2.1 POWER SUPPLY SPECIFICATIONS

2.1.1 OVERVIEW

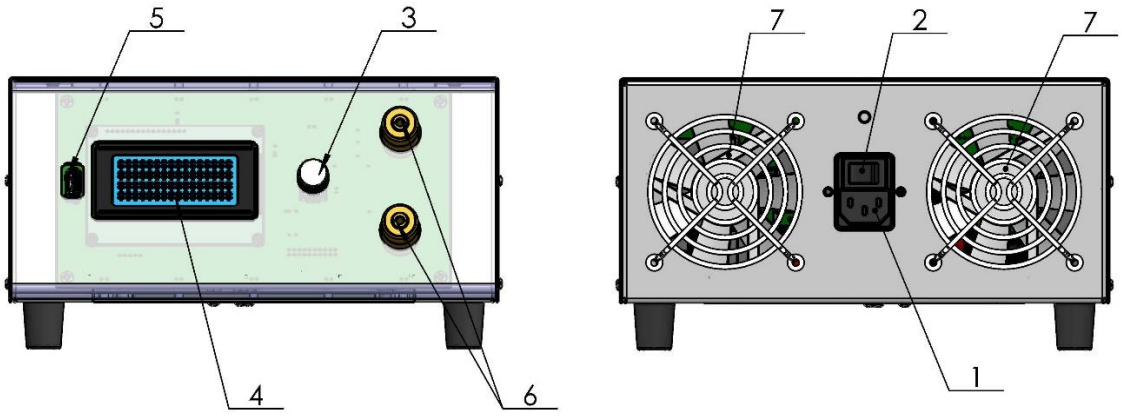

Fig.1. ***DC Plater Power supply 270.60A & 270.60N overview, controls, and main components***

Table.1. ***Controls and main components list***

Position	***Description***
1	Power entry
2	ON/OFF Switch
3	Rotary Encoder
4	Control panel display
5	USB - use only for firmware upgrade
6	Plater power output
7	Cooling Fan

2.1.1.1 Controls

Table.2. Controls

Control	Function	Description
Rotary Encoder	**rotation**	Use to scroll between the menu entities and set variable values.
	push button	A short pressing enters in the sub-menu, use to select/deselect values in edit mode.
	push button	Use the long pressing and hold for more than 3 seconds to go back to the Main menu and set the device to standby mode (switch off the Plater).

2.1.1.2 LEDs

Table.3. LEDs indications

Condition	Indication status
Standby	Backlight **Green** LEDs are OFF.
Plater ON	Backlight **Green** LEDs are ON.
Error	Backlight **Green** LEDs are **blinking**.

2.1.1.3 Rotary encoder RGB LED

Table.4. Encoder LED indication

Indication status	Condition
Light off	Standby condition.
Purple light	Plater is on, the Power limit 950W is reached.
Yellow light	The output limit by Current is reached.
Blinking Red light	A Device fault is present.

2.2 MENU

*After switching on the supply, the main screen appears the Control Panel, use the Rotary Encoder to scroll and select the appropriate menu:

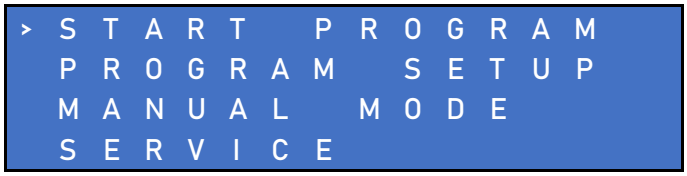

Fig.2. Mian menu screen

2.2.1 Start program

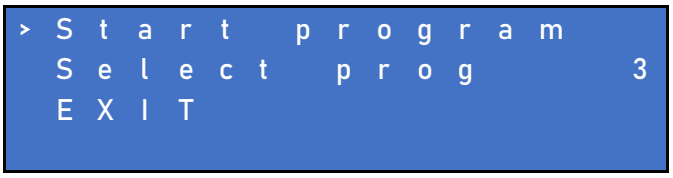

Fig.3. Start program screen

* Press shortly the Rotary Encoder to START/STOP the program, a long press will return you back to the Main menu

Table.5. Start program menu list

Row №	***Menu Name***	***Description***
1	Start Program	Navigate to the Start program field after you have selected the Program of your choosing. A different screen will appear to allow you to adjust the program name and settings. Short press the Encoder button to START/STOP the Program.
2	Select program	Press shortly the Rotary Encoder to select the program to use. Up to five programs are available for choosing and a sixth option - Sequence is available also.
3	EXIT	Select EXIT to go back to the Main menu screen.

2.2.1.1 Start program submenu

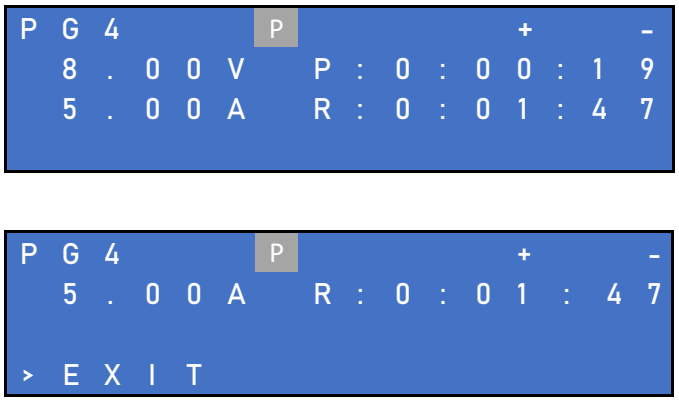

Fig.4. Start Program sub-menu screen - Ready

Table.6. Start Program sub-menu list

Row №	Description
1	Contains information for the active Program number, indicator for the selected type (“P” – single program, “S” - programs sequence), Polarity (Output Voltage reverse) and Plater ON (SS) symbol indication.
2	Shows the output voltage and plate time.
3	Shows the output current and plate reverse time timer.
4	Select EXIT to go back to the sub-menu screen.

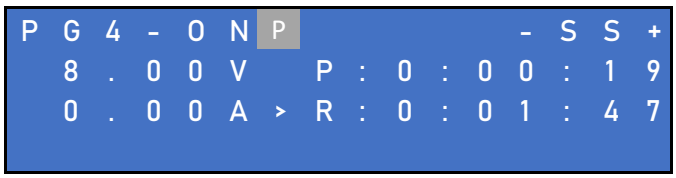

Fig.5. Start Program screen - Plater ON

Note: *Depending on the configuration, when some of the features are disabled, missing, or not used (for example heating), the menus for the related option will be not displayed. The symbol ' >' show the current active process step. Depending on the state of the process, values show measured or rest of time to end of the step, or pre-set value.*

2.2.2 Program setup

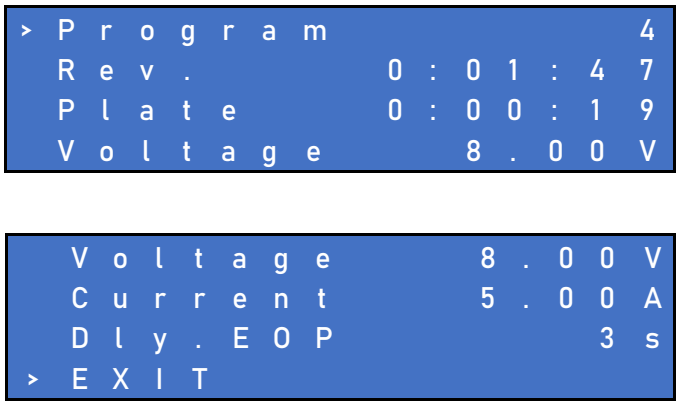

Fig.6. Program setup screen

2.2.2.1 Configure program settings

Table.7. Program settings menus

Row №	Menu Name	Description
1	Program	Select the currently active program. Press the Rotary Encoder and the Program menu will start blinking, rotate the Encoder to select the program for editing. The maximum number of programs is 5 plus plus a sixth option - Program Sequence.
2	Rev.	Allows setting of reverse time from 0 to 1 hour and 29 min, step 1 seconds (max 1:29:59).
3	Plate	Setting of Plate time from 0 to 9 hours and 59 minutes, step 1 sec.

Row №	Menu Name	Description
4	Voltage	Plate voltage setting from 0.35 to 18V, step 0.01V
5	Current	Plate current limit setting from 0 to 80 A, step 0.01A
6	Dly, EOP	Delay after the end of the Plating process from 0 to 300 seconds, step 1 second.
7	EXIT	Returns to the Main menu screen.

Note: *Depending on the configuration, when some of the features are disabled, missing, or not used (for example heating), the menus for the related option will be not displayed.*

2.2.2.2 Setup program Sequence

*The system allows a sequence program configuration. This means that up to 5 programs can be executed sequentially.

Table.8. Program settings menus

Row №	Menu Name	Description
1	Program	Select the currently active program. Press the Encoder and the Program menu will start blinking, rotate the Encoder to select Sequence.
2 -6	Step 1-5	Configuration of the programs arrangement for sequence. Up to 4 steps rows will appear as a list selection, after the first one Step is set.
7	EXIT	Select EXIT to go back to the Main menu screen.

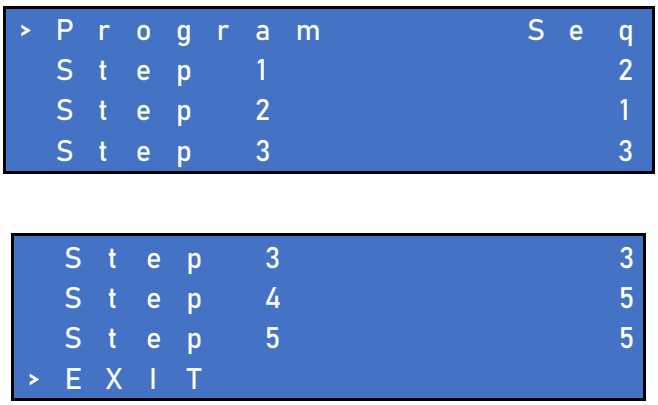

Fig.7. Sequence Program screen

2.2.3 Manual mode

The Manual mode allows control of the Plating, output Voltage, Current limit, and Output voltage reverse.

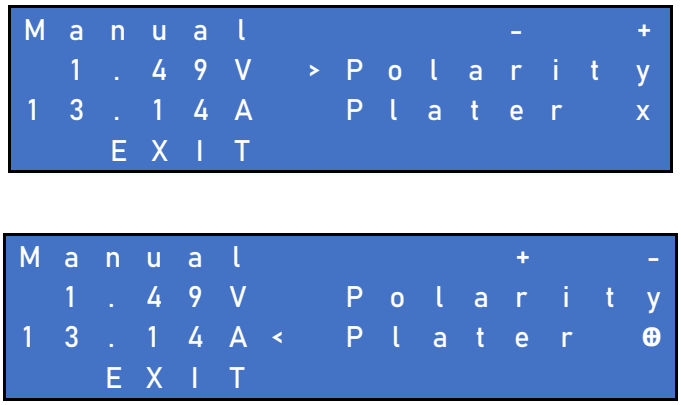

Fig.8. Manual mode screen – settings – Plater OFF

Table.9. Program settings menus

Row №	Menu Name	Description
1	Manual	Contains Manual mode information, polarity, and Plater ON symbol indication.
2	Voltage & Polarity	Output voltage and polarity. Use the Encoder to select and set the Voltage value or the Output Voltage reverse (Polarity). The Plate voltage can be set from 0.35 to 18V by step of 0.01V. Check the indication on the row above for Polarity change status.
3	Current & Plater	Output current and Plater ON(ψ)/OFF(X) state. Use the Encoder to select and set the current value or to Start Plating, if the arow is pointing Plater menu. The Plater current limit can be set from 0 to 80 A by step of 0.01A. The Plater menu selection and pressing the Encoder button will turn ON the Plater. To turn OFF the Plater, short press the Encoder button. The current and voltage value will change during the plating, according to the preset limit settings.
4	EXIT	Select EXIT to go back to the Main menu screen.

Note: *Depending on the configuration, when some of the features are disabled, missing, or not used (for example heating), the menus for the related option will be not displayed.*
The symbol '>' show the current active process step

Fig.9. Manual mode screen – Heat ON – Plater ON

2.2.4 Service

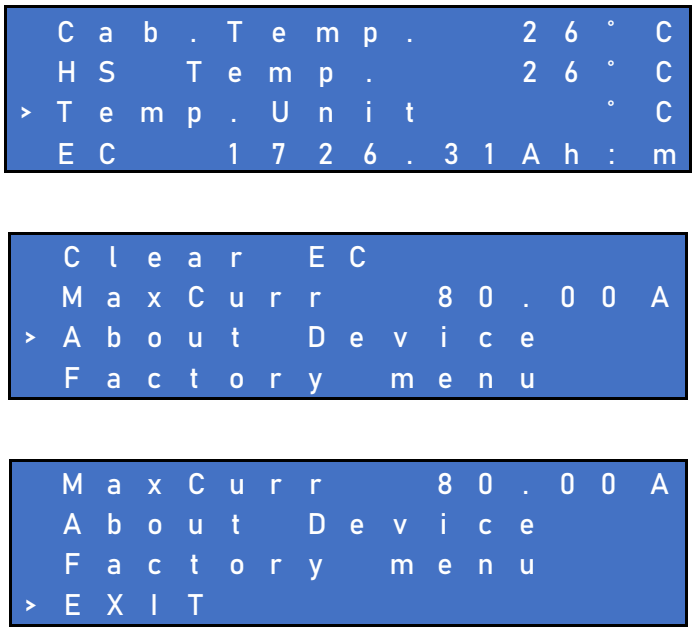

Fig.10. Service menu screens

Table.10. Program settings menus

Row №	***Menu Name***	***Description***
1	Cab.Temp.	The measured PS cabinet temperature value.
2	HS Temp.	The measured HS cabinet temperature value.
3	Temp.Unit	Select the value of measured temperature in Celsius or Fahrenheit.
4	EC	The EC value shows the electric charge transferred in amperes for a time period.
5	Clear EC	Resets the EC counter.
6	MaxCurr	Limit setting of the Maximum Current value. Maximum permissible power that can be fed to the output.
7	About Device	Shows the general and About information of the machine – model, revision, electric charge.
8	Factory menu	The menu contains the Factory settings for the machine that can only be accessed with a factory password. This menu should never need to be accessed by the user.
9	EXIT	Select EXIT to go back to the Main menu screen.

Fig.11. Unit About Screen

3 SERVICE AND TROUBLESHOOTING

3.1 TROUBLESHOOTING

N	*Troubleshooting*	*Recommended actions*
1	The PS won`t start after turning on the "ON/OFF" switch	1. Check the power line voltage supplied to the machine. For more information see the **Technical Product Specification** table. 2. Check the condition and connection of the AC cable to the PS.
2	Current indicator shows value "0.00A"	Check the connection to the load.
3	Over temperature protection	1.The fault appears, when the Plater is ON, the Heat sink temperature is over 60˚C. 2.Wait until the Unit cools down. 3.Clear the fault with EXIT the sub-menu.
4	Over current protection	1.The output current value is over the maximum safety limit of operation. 2.Clear the fault with the EXIT the sub-menu.

3.2 TECHNICAL SUPPORT INFORMATION

If for some reason the unit fails in the field, it is advisable that the unit be serviced by the manufacturer or its authorized service representative. Should that happen, please contact us immediately (see contact information in Section 3.3). Please have the following information about your unit available upon calling:

1. Unit Model and Revision (located on the label on the back of the unit).
2. Unit's Serial Number (located on the label on the back of the unit).
3. Line Voltage and frequency.
4. Detailed description of the problem encountered including – load, ambient temperature at the time of the failure.
5. Detailed description of the actions taken.
6. Approximate time in service.

If our technical staff is unable to help you over the phone, then a repair authorization number (RA#) will be issued for you. With this number enclosed in you return package you can ship the unit back for repair or request a service engineer to repair the unit on site.

3.3 SERVICE CONTACT INFORMATION

For technical service questions, please call:

Phone: + 1 405 780 4698
Fax: + 1 405 745 4335

Or e-mail us at: support@pepetools.com

You can also send you request through our web site.

Note: Please, include your contact information so that you can be easily reached if necessary.

Appendix: A MECHANICAL DIMENSIONS

A.1 POWER SUPPLY DIMENSION (mm)

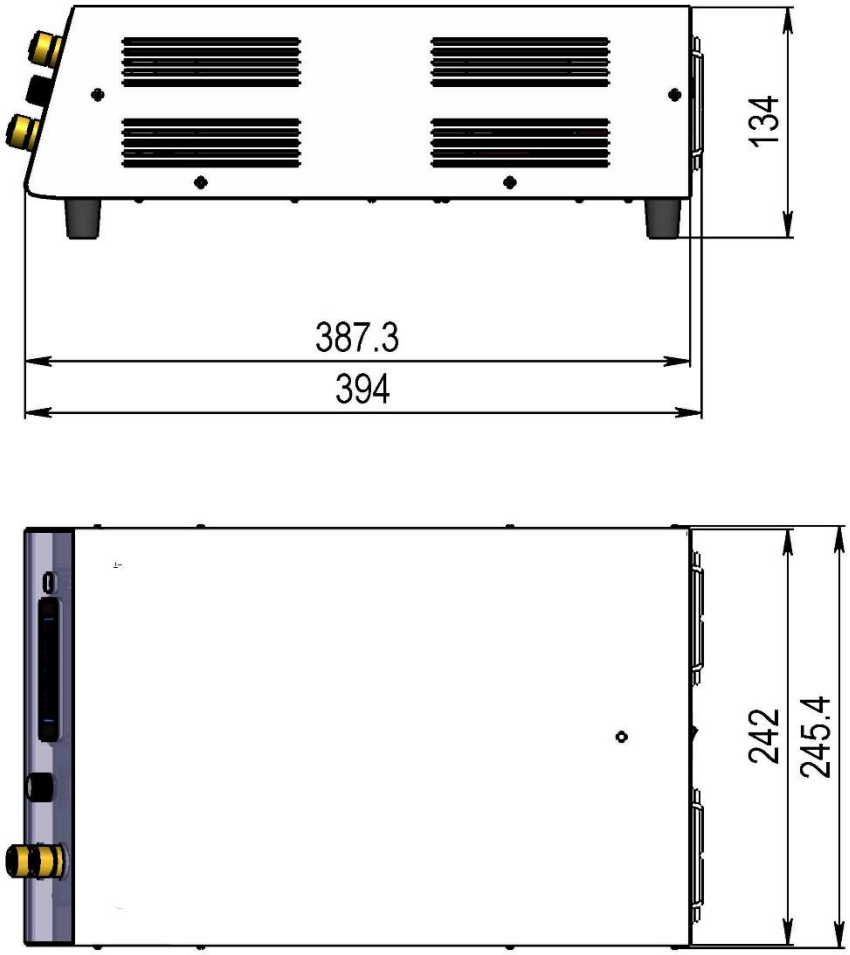

Fig.Appendix1. Power Supply 270.60A & 270.60N dimensions in mm

Revision Table:

№	Version	Date	Revision Machine	Remarks	Create/Change by:
1	1.0	12.2021	A10	First release	M.Nikolova
2	1.1	01.2022	A10	EC – Ah:m	M.Nikolova