ATH-1035

MULTI OUTPUT ADJUSTABLE DC POWER SUPPLY

USER'S MANUAL

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Safety precautions

These instruments fulfil the regulations of CE-LVD (EN-61010-1) and CE-EMC (EN-55022; EN 50082-1)
To ensure safe operation of the equipment and eliminate the danger of serious injury due to short-circuit (arcing), the following safety precautions must be observed. Damages resulting from failure to observe these safety precautions are exempt from any legal claims whatever.

* Prior to connection of the equipment to the mains outlet, check that the available mains voltage corresponds to the voltage setting of theequipment.
* Connect the mains plug of the equipment only to a mains outlet with earth connection.
* Do not place the equipment on damp or wet surfaces.
* Do not subject the equipment to direct sunlight or extreme temperatures.
* Do not subject the equipment to extreme humidity or dampness
* Replace a defective fuse only with a fuse of the original rating. Never short circuit fuse or fuse housing
* Do not exceed the maximum permissible input rating.
* Conduct measuring works only in dry clothing and in rubber shoes, i.e.on isolating mats.
* Comply with the warning labels and other info on the equipment.
* Do not insert metal objects into the equipment by way of the ventilation slots
* Do not place water-filled containers on the equipment (danger of short-circuit in case of knock over of the container)
* Do not operate the equipment near strong magnetic fields (motors, transformer etc.)
* Do not subject the equipment to shocks or strong vibrations
* Keep hot soldering iron or guns away from the equipment
* Allow the equipment to stabilize at room temperature before taking up measurement (important for exact measurement)
* Do not modify the equipment in any way
* Do not place the equipment face-down on any table or work bench to prevent damaging the controls at the front.
*Opening the equipment and any service and repair work must be performed by qualified service personal. Repair work should be performed in the presence of a second person trained to ad minister first aid, if needed.
* Power supplies do not belong to children hands.

Cleaning the cabinet

Prior to cleaning the cabinet, withdraw the mains plug from the power outlet. Clean only with a damp, soft cloth and a commercially available mild household cleaner. Ensure that no water gets inside the equipment to prevent possible shorts anddamage to the equipment.

INTRODUCTION

This unit is high-precision DC power supply has four way outputs. Of which, one way is variable and three ways are fixed. The one variable output can also be selected for constant voltage or constant current, designed in high stability and performance circuit.
In constant voltage state, the output voltage can be arbitrarily adjusted from 0V on in the nominal range. Especially the polarity of the output can switch to an inverse state; In the state of constant current, the output current can be adjusted from 0A on in the nominal range. The three fixed outputs +5V, +15V and -15V voltage. Due to the single chip integrated regulator, these three ouputs have good stability and ripple factor, and have reliable overload protection to protect the unit against being damaged whenever overload or short circuit. The unit features in small size, good performance, novel appearance and etc., It is the ideal power supply unit for science investigation, college, factory, electronic appliance maintenance and etc.
This unit has 3 digit LED for both indicating voltage and current.

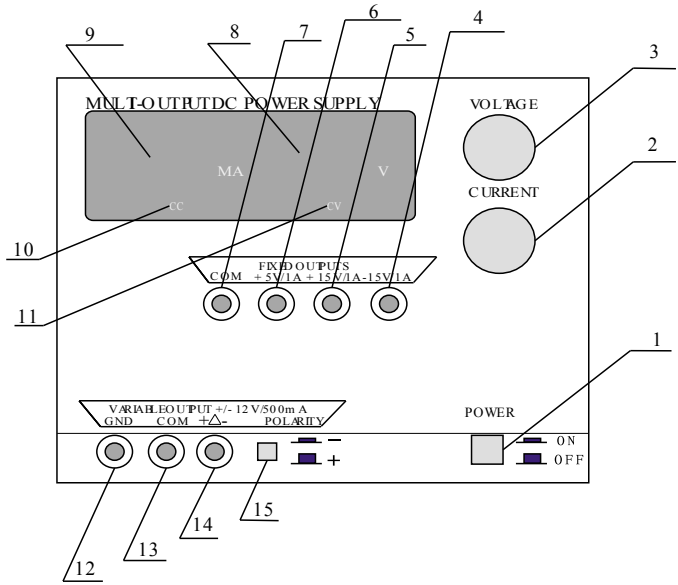
1. TECHNICAL DATA

1.1 Input voltage: 110~127VAC±10% 60Hz
220~240VAC±10% 50Hz Switchable
1.2 Output voltage
1.2.1 One variable output: 0~±12VDC Variable
1.2.2 Three fixed output:+5VDC, +15VDC, -15VDC Fixed
1.3 Output current
1.3.1 One variable output: 0~500mA Variable
Three fixed output: 1A Fixed
1.4 Line regulation:
1.41 One variable output
CV≤1x 10^{-4}+3mV
CC≤2 x 10^{-3}+1mA
1.42 Three fixed outputs ≤1%
1.5 Load regulation:
1.51 One variable output
CV≤1x 10^{-4}+2mV
CC≤2 x 10^{-3}+1mA
1.52 Three fixed outputs ≤1%

1.6 Ripple & noise:
1.61 One variable output
CV≤0.5mV rms
CC≤1mA rms
1.62 Three fixed outputs ≤5mV rms
1.7 Protection: current-limit
1.8 indication accuracy:
a. Volt-indication: ±(0.2%Rdg+2 digits)
b. Amp-indication: ± (1%Rdg+2 digits)

2. OPERATION

2.1 Controls and description of front-panel



(1)Power switch: the unit is ON when this button switch is depressed
(2)Costant Current adjustment: adjusting output current of variable output
(3)Costant Voltage adjustment: adjusting output voltage of variable output
(4)Fixed -15V output terminal: Connecting -15VDC of load
(5)Fixed +15V output terminal: Connecting +15VDC of load
(6)Fixed +5V output terminal: Connecting +5VDC of load
(7)Com terminal: Com for all three fixed output
(8)Constant Volt display: indicating output voltage of variable output by LED
(9)Constant Amp display: indicating output current of variable output by LED
(10)Constant-current indicator: the LED illuminates when variable output is in current regulated state
(11)Constant-voltage indicator: the LED illuminates when variable output is in voltage regulated state
(12) Case ground: Connecting the case to ground
(13)Com: connecting the negative terminal or positive terminal of load
(14)Output terminal: connecting the positive terminal or negative terminal of load
(15)Polarity switch: switching the output polarity of variable output

2.2 Operating method
2.2.1 One variable output
2.2.1.1 When the variable output is used as CV output, first should rotate clockwise the CC adjustment (2) to maximum, then turn on power switch (1), adjust CV adjustment (3)till output voltage reach required voltage value. At this time the CC state indicator (10) go out and the CV state indicator (11) light on.
2.2.1.2 Used as CC output, after turning on power switch (1), first rotate clockwise the CV adjustment (3) to maximum, while rotate counterclockwise the CC adjustment (2) to minimum, connect the required load, again adjust clockwise adjustment (2) till output current reach the required current value. At this time, the CV state indicator (11) go out and the CC state indicator (10) light on.
2.2.1.3 Used as the CV output, in general the CC adjustment (2) should be set to maximum, but for these units, the current-limiting protection point can also be set arbitrarily. Setting procedure: turn on power, rotate counterclockwise the CC adjustment (2) to minimum, then make the positive and negative output terminal in short connection and rotate clockwise the CC adjustment (2) till output current equal to the required current-limiting protection point, so the current- limiting protection point is well set, disconnect the short connection.
2.2.1.4 Depress the polarity switch (15), output terminal (14) is positive Norminal output terminal (14) is negative.
2.2.2 Three fixed output+5V/1A terminal (6) connecting to the +5VDC of load -15V/1A terminal (4) connecting to the -15VDC of load +15V/1A terminal (5) connecting to the +15VDC of load terminal (7) connect the com of load

2.3 The LED (LCD) display is in three digits. To get more accurate measuring value, you should calibrate by external circuit with high precision measuring instrument.

3. CAUTION

3.1 This unit has excellent protection function, three fixed outputs have reliable protection for current-limit and short. The one adjustable output has current-limit protection. As there is controlling circuit for regulating transistor's power loss in the circuit, when short-circuit occurs, the power loss on large power transistors is not very high, it can't cause any damage to the unit. But there is still power loss when short-circuit, in order to reduce aging and energy consumption, so this situation should be found as soon as possible and turn off power, then exclude the faults.
3.2 When operating is finished, put it in a dry place of good ventilation, and keep it clean. If it is not use for a long period, pull off the power supply plug for storage.
3.3 For maintenance, input voltage must be cut off.

4. ACCESSORIES

4.1 Manual 1 copy
4.2 Fuse 2 pcs