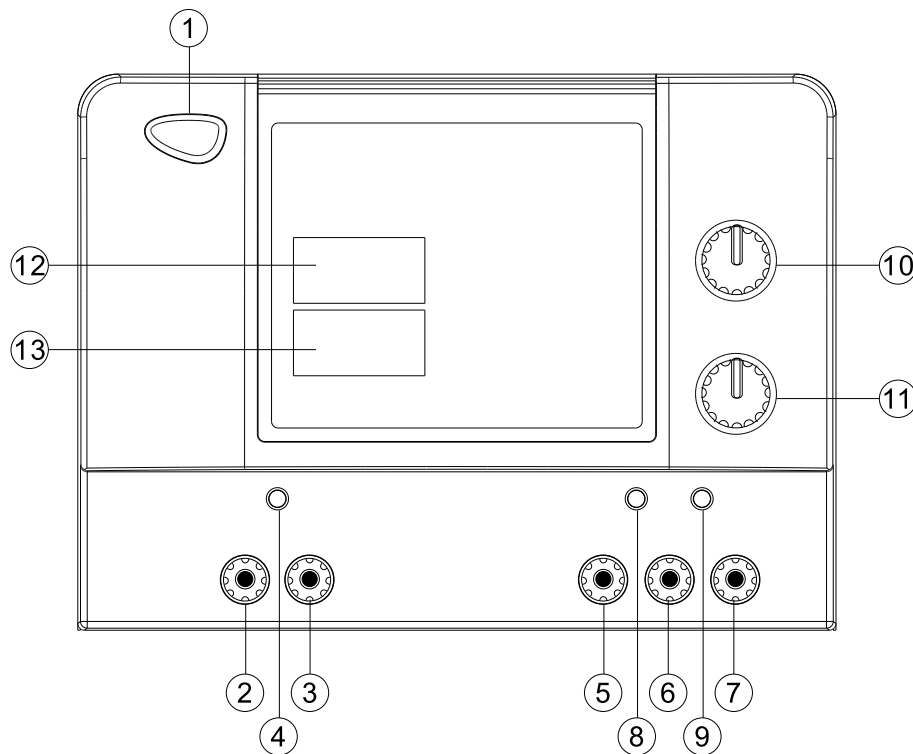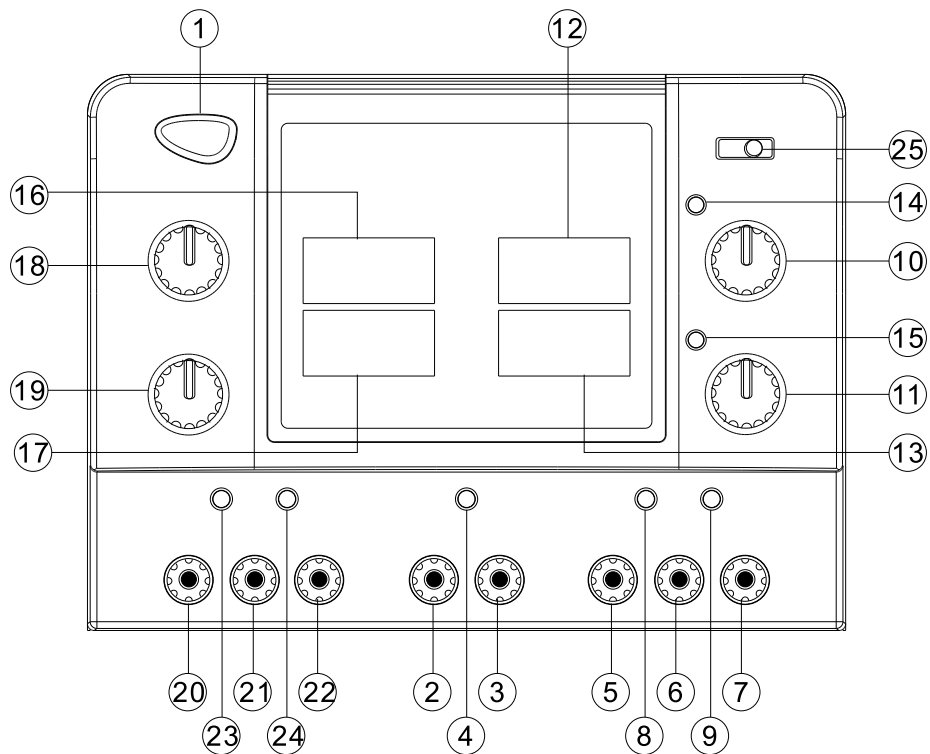# Panel Description

1. Front Panel of 3302 / 3032R / 4032

1. **Power switch**: Push the switch button to turn "ON" the power and the LED(12 & 13) will light up ; to push the button again, the power will turn "OFF" .
2. **5V ⊖ output terminal**: Negative output terminal of the fixed 5V/3A output (black).
3. **5V ⊕ output terminal**: Positive output terminal of the fixed 5V/3A output (red).
4. **Over load indicator**: 5V/3A over load red LED indicator.
5. **Master ⊖ output terminal**: Negative output terminal of the MASTER 0-30V/0-3A output (black).
6. **Master GND terminal**: Ground terminal of the master output (green).
7. **Master ⊕ output terminal**: Positive output terminal of the master 0-30V/0-3A output (red).
8. **C.C. mode LED**: Red LED to indicate constant current.
9. **C.V. mode LED**: Green LED to indicate constant voltage.
10. **Master voltage adjustment knob**: For adjusting master output voltage when master power is at c.v.mode.
11. **Master current adjustment knob**: For adjusting master output current when master power is at c.c. mode.
12. Master voltage indicator display in full **3-digits Green 0.52"LED**. (3032/3032R)
    Master voltage indicator display in full **4-digits Green 0.36"LED**. (4032)
13. Master current indicator display in full **3-digits Red 0.52" LED**. (3032/3032R)
    Master current indicator display in full **4-digits Red 0.36" LED**. (4032)

2. Front Panel of 3303 / 3033R / 4033

1. **Power switch**: Push the switch button to turn "ON" the power and the LED(12,13,16,17) will light up ; to push the button again, the power will turn "OFF" .
2. **5V⊖ output terminal**: Negative output terminal of the fixed 5V/3A output (black).
3. **5V⊕ output terminal**: Positive output terminal of the fixed 5V/3A output (red).
4. **Over load indicator**: 5V/3A over load red LED indicator.
5. **Master⊖output terminal**: Negative output terminal of the MASTER 0-30V/0-3A output (black).
6. **Master GND terminal**: Ground terminal of the master output (green).
7. **Master⊕output terminal**: Positive output terminal of the master 0-30V/0-3A output (red).
8. **Master C.C. mode LED**: Red LED to indicate constant current.
9. **Master C.V. mode LED**: Green LED to indicate constant voltage.
10. **Master voltage adjustment knob and Series mode** (3033 only)**.**
    Switch: For adjusting the master output voltage when master power is at C.V. mode. Pull the switch to set the power supply in "Series" operation mode.
11. **Master current adjustment knob and Parallel mode**(3033 only)**.**
    Switch: For adjusting the master output voltage when master power is at C.V. mode. Pull the switch to set the power supply in "Parallel" operation mode.
    [NOTE] When both 10 and 11 switch is pulled, the power supply will be set at "Parallel" mode.
12. Master voltage indicator display in full **3-digits Green 0.52"LED**. (3033/3033R)
    Master voltage indicator display in full **4-digits Green 0.36"LED**. (4033)
13. Master current indicator display in full **3-digits Red 0.52" LED**. (3033/3033R)
    Master current indicator display in full **4-digits Red 0.36" LED**. (4033)

14. Series mode indicator: When pull switch 10 to set the power supply in series mode, the Green LED will be light to indicate series mode.

15. Parallel mode indicator: When pull switch 11 to set the power supply in parallel Mode the Red LED will be light to indicate parallel mode.

16. Slave voltage indicator display in full **3 digits Green 0.52"LED**. (3033/3033R)
Slave voltage indicator display in full **4 digits Green 0.36"LED**. (4033)

17. Slave current indicator display in full **3 digits Red 0.52"LED**. (3033/3033R)
Slave current indicator display in full **4 digits Red 0.36"LED**. (4033)

18. Slave voltage adjustment knob: For adjusting slave output voltage when slave is at C.V. Mode.

19. Slave current adjustment knob: For adjusting slave output current when slave is at C.C. Mode.

20. Slave ⊖ output terminal: Slave negative output terminal 0-30V/0-3A output (black).

21. Slave GND terminal: Slave ground terminal (green).

22. Slave ⊕ output terminal: Slave positive output terminal 0-30V/0-3A output (Red).

23. Slave C.C. mode indicator: Red LED to indicate constant current at slave power.

24. Slave C.V. mode indicator: Green LED to indicate constant voltage at slave power.

25. Output mode switch: Select to set the"IND", "SER", "PAR" position to turn "Independent" or "Serial Tracking" or "Parallel" output mode.

3. Rear Panel Description
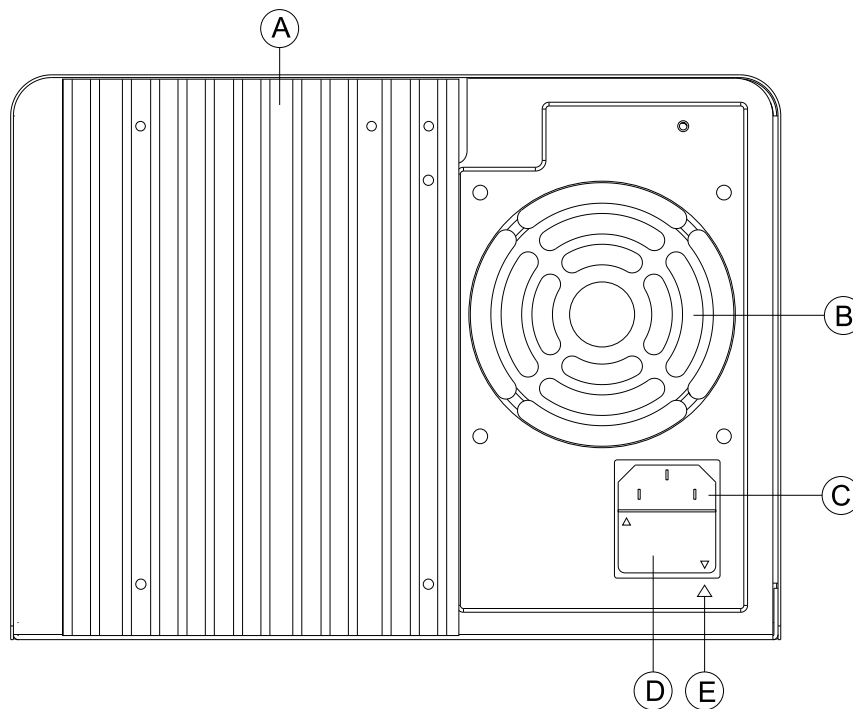
A. Heat sink: heat dissipation for power transistor.

B. Ventilation Fan: 8" 24V DC fan.

C. Power input socket.

D. Fuse Holder and input voltage selector: the selected input voltage is set the voltage marked on the holder to the ▽ (29) mark on the rear panel.

E. The input power voltage indicator: The ▽ mark show the input line voltage been set.

Operation Instruction

⚠ COUTION

Before operating model 3302/4032, please check input voltage is right or not and the ventilation holes are been jammed.

⚠ WARNING

After pressing the "SWITCH ON" button, please check the operation of ventilation fan is normal or not. To avoid the instrument is over heat.

A. Setting the output voltage and output current

1. To check the total load to be connected do not exceed the maximum output voltage and current of the instrument.
2. To open the circuit between the "—" (5) and "+ " (7) output terminals. Turn the voltage adjustment knob (10) to get the desired output voltage display on (12).
3. To turn the current adjustment knob (11) counterclockwise to get the minimum current output display on (13).

⚠ WARNING Before you had finished the step (3). Never doing the step (4).

4. Short the circuit between the "—" (5) and "+ " (7) output terminals by the accessory leads.
5. Turn the current adjustment knob clockwise until the current indicator (13) displays current.
6. Open the circuit between the "+" and "— " output terminal the power supply is ready to be operate as constant voltage mode. C.V. LED (Green) will be light.

[NOTE]

The power supply can automatically operate between constant voltage and constant current by responding quickly to the load changes, when the C.C. LED(Red) light up, the C.V. LED (green) will be off and the voltage display (12) will be down.

B. Operation Modes of 3032/4032

The power supply 3032 can be operated alone or connected two or more units inserial to obtain a higher voltage rating (Max. 240V). or in parallel to obtain a higher current (Max. 24A)

⚠ WARNING Never connected GND (green) terminal to any place on this operation.

1. Serial Mode:

On serial mode operation the output current of the connected units must be set at equal or higher than the current desired and at least one unit in these connected units been set at the same current output as the desired current.

The total output voltage will be the sum of each unit been set. And the output current will be the same as the lowest output current been set in these connected unit.

⚠ WARNING The total output voltage never higher than 240V.

2. Parallel Mode:

On parallel mode operation. All the connect units must be set at the same output voltage as the voltage desired. The total output current will be the sum of the each unit been set.

⚠ WARNING   The output current never higher than 24A.

3. Fixed 5V/3A:

This is the standard 5V/3A-power output for use by TTL logic circuit. When the load exceeds 3A. The red OVER LOAD LED (4) will light up. The output voltage will lower and the power supply will be under C.C. Mode.

C. Operation Modes of 3033

The power supply 3033 can be operated alone or connected two or more units inserial to obtain a higher voltage rating (Max. 240V). or in parallel to obtain a higher current (Max. 24A)

⚠ WARNING   Never connected GND (green) terminal to any place on this operation.

1. Independent Mode:

The master and the slave output of 3303 can be used independently to generate voltage and current. To operate 3303 under independent mode. Set the master output voltage/current and slave output voltage/current as described in section A and B, model 3033.

⚠ WARNING   When 3303 was operated under independent mode the switch No.10 and 11 always set at "PUSH" position. Never pull off the switch

2. Serial Tracking Mode:

[NOTE] When 3303 was operated under this mode. The master output is serial connected to the slave output automatically. The serial output is generated from the "+" of the master output terminal (7) and the "−" of the slave output terminal (20). The output voltage will be TWICE of the set master output voltage and the current will be the same as the master setting current.

2-1. "PULL" the master voltage adjustment knob (10) the power supply 3303 will under serial operation mode and the yellow LED (14) will light up.

2-2. Turn the slave current adjustment knob (19) clockwise to maximum.

2-3. Set the master output voltage and current as described on section A, 3032 model.

2-4.The output terminal will be "+" of the master and "−" of the slave terminals.

3. Parallel tracking Mode:

[NOTE] when 3303 is operated under "PARALLEL" mode. The master output terminals are parallel connected to the slave output terminal automatically. The parallel output is generated from the master output for both "+" and "−" terminals (or slave output terminal) the output voltage is the same as the master set value and the output current is twice the set master output current.

3-1. "PULL" the current adjustment knob of the master output (11) to set the 3303 operate under parallel mode and the yellow LED (15) will light up.

[NOTE]when both knob (10) and (11) are set at "PULL" position. The power supply 3303 will be operated under "INDEPENDENT" mode.

3-2. Turn both of the voltage adjustment knob (18) and current adjustment knob (19) of the slave output clockwise to maximum.

3-3. Set the master output voltage and current as described on section A, model 3033.

3-4. The output terminal can be the "+","－" terminal of the master output or "+" master and "－" terminal of the slave output .

4. Serial mode:

The power supply 3303 can be connected two or more units in series to obtain a higher voltage output (Max. 240V).

4-1. Set all the 3303 which would be connected in serial operation under serial tracking mode as described on section 2, serial tracking mode and adjusts to the same output.

4-2. Connect the "－" slave output terminal of the unit 1 to the "+" master output terminal of the unit 2.

4-3. The output voltage the system will be the "+" master output terminal of the unit 1 and the "－" slave output terminal of the unit 2.

4-4. If the connected units are more than 2. Connect the "+" master output terminal of the 3rd unit to the "－" slave output terminal of the unit 2. etc. The output voltage of the system will be the "+" master output terminal of the 1st unit to the "－" slave output terminal of the last unit.

⚠ WARNING   The maximum output voltage of the system is never exceeds 240V.

5. Parallel Mode:

The power supply 3303 can be connected two or more units in parallel to obtain a higher current output (Max. 24A only).

5-1. Set all the 3303 which will be connected in parallel operation under parallel tracking mode as described on section 3, parallel tracking mode and adjust all units to the same output voltage

5-2. Parallel connected the "+" master output of all unit and "－" slave output of all units in the system.

5-3. The output voltage of the system is the same as the units been set. The output current of the system is the sum of each unit.

⚠ WARNING   The Max. output current of the system never exceeds 24A.

6. Fixed 5V/3A output:

This is the standard 5V/3A-power output for use by TTL logic circuit. When the load exceed 3A, the red overload LED will light up. The output voltage will lower and the power supply will be under C.C. mode.

D. Operation Modes of 4033

To set the output mode switch(25) at:

1. Independent Mode: To set the switch at " IND " position.

2. Serial Tracking Mode: To set the switch at " SER " position.

3. Parallel Tracking Mode: To set the switch at " PAR " position.

4. Serial mode:

The power supply 4303 can be connected two or more units in series to obtain a higher voltage
output (Max. 240V).

4-1. Set all the 4303 which would be connected in serial operation under serial tracking mode as
described on section 2, serial tracking mode and adjusts to the same output.

4-2. Connect the "－" slave output terminal of the unit 1 to the "+" master output terminal of the unit
2.

4-3. The output voltage the system will be the "+" master output terminal of the unit 1 and the "－"
slave output terminal of the unit 2.

4-4. If the connected units are more than 2. Connect the "+" master output terminal of the 3rd unit to
the "－" slave output terminal of the unit 2. etc. The output voltage of the system will be the "+"
master output terminal of the 1st unit to the "－" slave output terminal of the last unit.

⚠ WARNING   The maximum output voltage of the system is never exceeds 240V.

5. Parallel Mode:

The power supply 4303 can be connected two or more units in parallel to obtain a higher current
output (Max. 24A only).

5-1. Set all the 4303 which will be connected in parallel operation under parallel tracking mode as
described on section 3, parallel tracking mode and adjust all units to the same output voltage

5-2. Parallel connected the "+" master output of all unit and "－" slave output of all units in the
system.

5-3. The output voltage of the system is the same as the units been set. The output current of the
system is the sum of each unit.

⚠ WARNING   The Max. output current of the system never exceeds 24A.

6. Fixed 5V/3A output:

This is the standard 5V/3A-power output for use by TTL logic circuit. When the load exceed 3A, the
red overload LED will light up. The output voltage will lower and the power supply will be under
C.C. mode.