

QUASAR ELECTRONICS

PSU685

POWER SUPPLY

2 x 0-30V / 0-3A + 1 x 5V / 3A

INSTRUCTION MANUAL

UK

The Quasar range of adjustable power supplies is fitted with high precision voltage and current controls. The voltage is continuously adjustable and the max. output current limit can also be adjusted. The power supply can be used as a constant power source. In that case the current is continuously adjustable. The two variable outputs can be connected in series or parallel with a master/slave function for the setting of voltage and current. The fixed 5V output works with a single chip stabilizer that is fitted with a reliable protection against overheating and short circuits.

The power supply has been designed for professional use in work shops, laboratories and schools.

The digital voltage and current display has a precision of 1 decimal with a max. deviation of $\pm 1\% + 2$ digits. The high precision control circuit can reach via an external measurement instrument an accuracy of 5mV for voltage and 10mA for current.

Operation

Front panel:

1. 4 voltage and current displays
2. Current adjustment of the left unit (slave)
3. Voltage adjustment of the left unit (slave)
4. Current adjustment of the right unit (master)
5. Voltage adjustment of the right unit (master)
6. 2 push buttons for stand alone/series/parallel operation
7. LED indicator for the voltage source of the left unit (current limit is not activated)
8. LED indicator for current source of the left unit (current limit is activated)
9. LED indicator for the voltage source of the right unit (current limit is not activated)
10. LED indicator for current source of the right unit (current limit is activated)
11. ON/OFF switch
12. 2 x 3 connection terminals:
 - red (+)
 - black (-)
 - green (earth ground)
13. 2 x 5V fixed output terminals
 - red (+)
 - black (-)

Use as separate Power supplies

Do not push in the push buttons.

Both units are completely separate from each other and can be used independently. The green terminals might be used to connect the positive or negative output to the chassis ground.

Adjust the required voltage and connect the unit to be powered to the red (+) and black (-) terminals. The current display shows the supplied current. If the current LED lights up, the power supply is overloaded or shorted. Check the connections and adjust the load in order to ensure trouble-free operation.

If you want to use the unit as a constant power supply, rotate both voltage controls completely clockwise (max. voltage) and the current control knob completely anti-clockwise until the required current value is reached.

Under normal conditions, the current control knob can be turned completely clockwise (for max. current) or rotated back to a required maximum current value in order to protect the connected unit.

Connection in series

Push in the left push button. Make sure that the right push button is NOT pushed in.

Connect a load between the black (-) terminal of the left unit and the red (+) terminal of the right unit. The output voltage is now the sum of the left and right voltages together i.e. max. 60 Volts. In a series connection the two green terminals are not connected.

In this configuration, the voltage is set via the knob of the master power supply. The current adjustment remain separate for both units (short circuit protection). This can be set at best at the maximum level (turn the adjustment knob completely clockwise). As soon as the current limit of the slave is activated, it does not follow any more the set master voltage.

Despite the fact that in a series connection, the units are linked together via the push buttons, it is recommended that in case of a series connection over a longer period of time, the red (+) terminal of the slave unit be connected to the black (-) terminal of the master unit via a short wire of sufficient thickness. This increases considerably the life time of the internal circuits and improves the stability of the output current and voltage.

Connection in parallel

Both push buttons must be pushed in. The current limit LED on the slave unit lights up.

The load can be connected either to the black (-) and red(+) terminal of the master unit as to the slave unit. The output voltage is now equal to the indication of both displays (max. 30V) but the current of both power supplies together i.e. max. 6Amps, are now available.

In a parallel connection, the voltage and the current limit of both units are set via the adjustment knobs of the master unit. The controls on the slave unit do not work.

Despite the fact that in a parallel connection, the units are linked together via the push buttons, it is recommended that in case of a parallel connection over a longer period of time, the red (+) and the black (-) terminals of the master and the slave unit are linked together via a short wire of sufficient thickness. This increases considerably the life time of the internal circuits and avoids an unbalance between the two units.

Safety recommendations:

- Check the case and the leads for damage.
- For indoor use only
- Do not use the unit in humid areas
- Do not spill liquids inside the housing.
- Do not place the unit at a warm place (max. 30°C)
- Do not obstruct the ventilation holes and heat sink. Leave enough space around the unit to ensure sufficient ventilation.
- The heat sink might get hot during operation. Do not touch during operation !

- Do not open the housing – leave all repairs to a qualified technician.
- Before replacing the fuse, unplug the unit from the mains.
- The power supply has an excellent short-circuit protection. However, in case of a short circuit, cure the problem as quickly as possible in order to avoid wear and tear of the unit and high current consumption.

Specifications:

Input voltage 230V / 50Hz

Output voltage 2 x 0-30V adjustable

1 x 5V fixed

Max. ripple & noise <15mV (at max. load)

Output current 2 x 0-3Amps adjustable

1 x 3 Amps