



Q 1770



Digital Display Lab Power Supply

0-30 volt 2.5 Amp

Output: 0 to 30V

Variable Current Limit: 0 to 2.5A

USER'S MANUAL

INTRODUCTION

The Q 1770 power supply is primarily designed for use in laboratory and service areas where versatility, unconditional stability, and low noise are prime requisites. It uses linear regulation and has a temperature compensated voltage reference. The continuously variable current limit (0-2.5A) provides tightly controlled protection and turns the supply into a constant current source when required. Automatic selection, by relay, of transformer secondary tapings is used to keep power dissipation to a minimum.

Important: Please read these instructions before using this power supply for the first time.

INSTALLATION

Before plugging this unit into an a.c. mains outlet, carefully check that the mains lead and power supply case are not damaged in any way.

Important: If the power cord or case are damaged, do not use the power supply. Return it to the place of purchase or a qualified repairer to avoid a hazard.

While operating the power supply for extended periods, especially at higher current levels, it is normal for internal temperatures to be high. Under worst conditions, the case temperature may approach 60°C above room temperature. The power supply can operate continuously at these temperatures as long as proper ventilation is maintained.

Important: Do not block any of the ventilation holes in the case as this may cause the power supply to overheat, and may lead to premature component failure.

The front panel of the Q 1770 has two types of d.c. output connectors, and it is important that they are used correctly. The "banana" style connectors can be used for the full output current of the supply. However, the spring-loaded terminals are suitable only for supply currents up to 1A maximum.

Important: Do not use the spring-loaded terminals on the front panel of the power supply for currents in excess of 1A.

OPERATION

Disconnect any loads from the power supply and plug the power supply into a convenient a.c. mains outlet (refer to mains voltage in the specifications). Switch the power supply on using the front panel power switch. The 'ON' led directly above the switch will come on to show that power is now available from the output terminals.

Rotate the current limit control so that it is not fully anticlockwise. Using the front panel voltage knob in conjunction with the front panel voltmeter, select the desired d.c. output voltage. Place a short circuit across the output and adjust the front panel current limit control, in conjunction with the front panel ammeter, until the desired current limit is obtained. In current limit mode the 'current limited' led comes on and the output voltage can not be controlled by the voltage control knob. As soon as the current falls below the limit the voltage will return to its set value.

OVERLOAD AND FAULT PROTECTION

Protection against short circuits is provided by current limiting which can be set anywhere between 0A and 2.5A by the current limit control on the front panel. A 1A manually resettable mains circuit breaker mounted on the back panel provides additional protection against fault conditions. The power transformer has an integral non-resettable thermal fuse as backup protection if the transformer overheats. The power supply to the meters and regulator control circuitry are independently protected by three 300mA fuses

At the output is a reverse voltage clamp to ground to prevent negative voltages appearing at the output in the event of an internal fault and to suppress negative transients caused by inductive loads.

Important: Do not connect the output of this supply across another power source. Overvoltages or reverse currents applied to the output may damage the supply.

SPECIFICATIONS

(@ 25°C unless otherwise noted)

Input:	230-240 V a.c. 50 Hz
Output voltage:	0 to 30 V d.c.
Output current:	2.5A d.c. max
Load regulation (0-100% load):	10 mV
Line regulation (240V±5%):	10 mV
Ripple & noise:	5 mV rms
Voltmeter accuracy:	+/-1.0 %
Ammeter accuracy:	+/-1.0 %
Mains overcurrent protection:	1A resettable circuit breaker